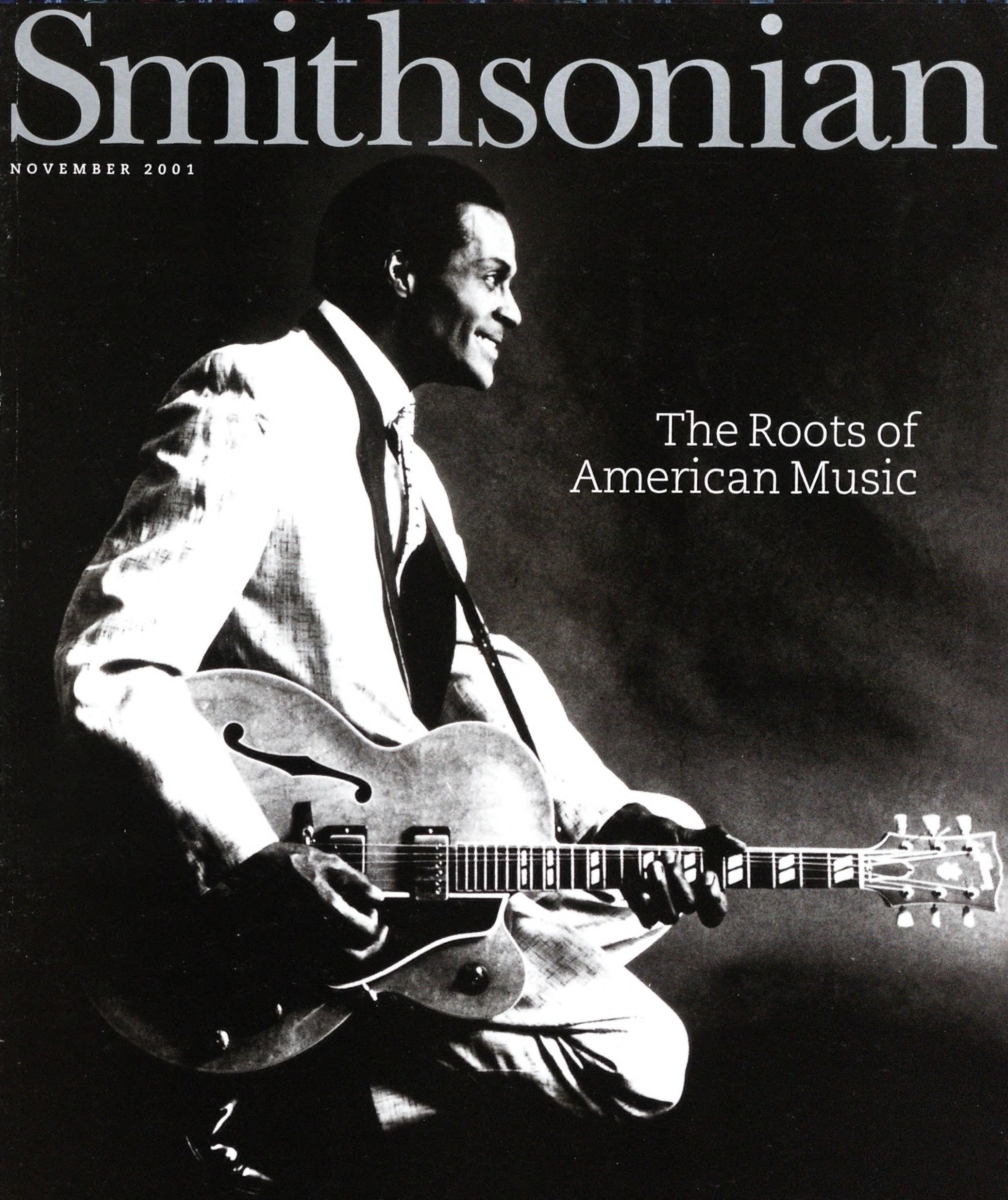
Smithsonian

NOVEMBER 2001



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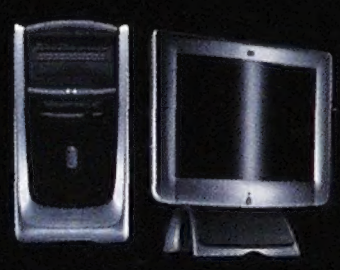

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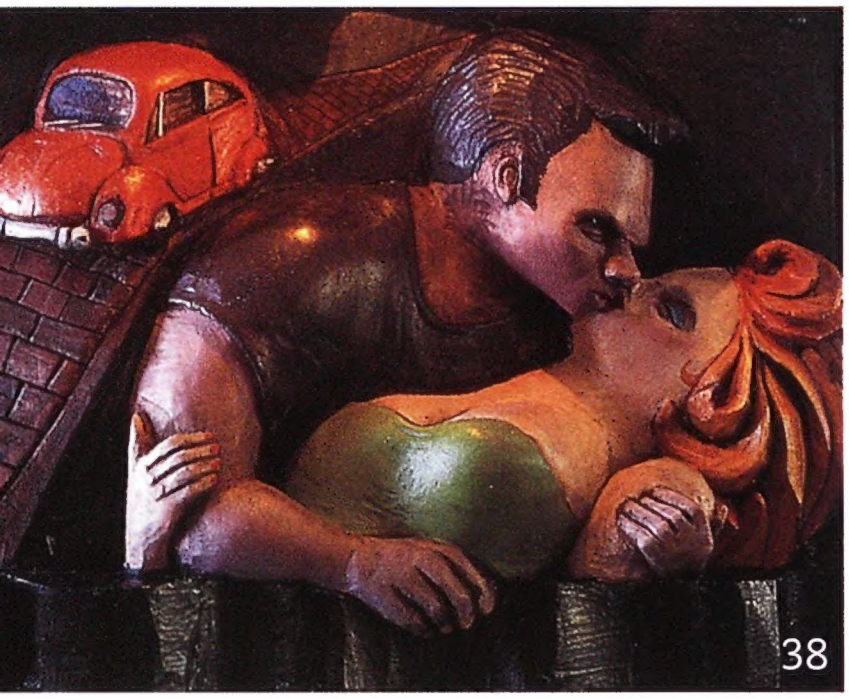
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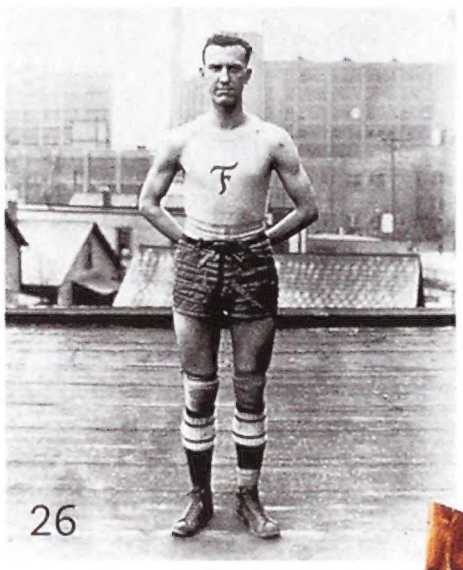
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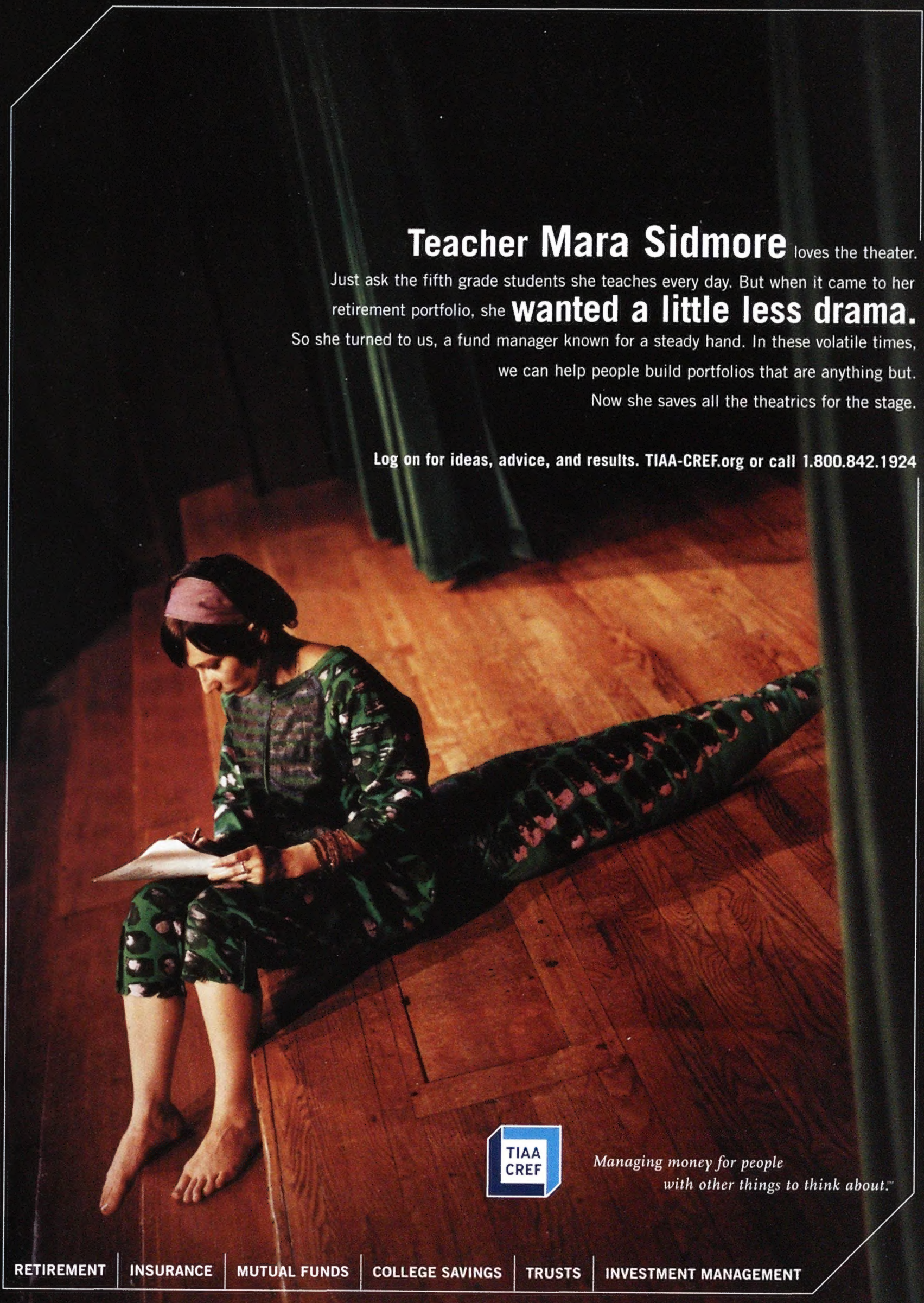
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RICHARD SCHULTZ; MICHAEL OCHS ARCHIVES; ERNST SCHEIDEGGER/NZZ
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BEHIND THE LINES

Carrying On

AFTER A CATACLYSM, THE EDITORS WRESTLED WITH HOW TO RESPOND

BY CAREY WINFREY, EDITOR

IN THE EMOTIONAL AFTERMATH of the World Trade Center and Pentagon calamity, we groped here at the magazine for the right editorial response in an issue that would not be read for weeks—the issue you now hold in your hands. As days passed, we took to heart New York City Mayor Rudolph Giuliani's advice to "go about our business and lead normal lives." For SMITHSONIAN, that meant continuing—in Secretary Lawrence Small's words about one of the missions of the Institution itself—"to provide authoritative experiences that connect the American people to their history and to their cultural and scientific heritage." More specifically, it meant going ahead with planned stories about the kinds of subjects that have long defined us: science and technology (see "Getting in Deep"), history and popular history ("Roots of Rhythm"), wildlife ("Risky Business") and the arts ("Magnificent Obsession" and "Very Verdi").

Winfrey: Would the wounds of September remain too raw?

One story gave us pause. As it happened, Rudy Chelminski, one of SMITHSONIAN's favorite writers, had visited the twin towers in August with Philippe Petit, the French high-wire artist who, back in 1974, almost single-handedly transformed the World Trade Center from architectural travesty—the initial judgment of many New Yorkers—to urban icon. Rudy's portrait of Petit, an artist of indisputable authenticity, made compelling reading. But would the wounds of September remain too raw for a story about a man who blithely, even illegally, danced on a wire strung above what has so tragically become known as ground zero? In the end we decided that spotlighting one of the World Trade Center's most exhilarating moments (see "Turning Point") made a fitting tribute to it.

Two articles about which we had no reservations whatsoever are Geoffrey C. Ward's reflections on American resilience ("Mongrel Nation"), which puts the events of September 11 in reassuring historical perspective, and Samuel G. Freedman's wrenching report from New York City ("Aftershocks"), which underscores the chilling fact that the effects may be with us for a very long time indeed.

This year, as in years past, SMITHSONIAN has surveyed children's books. This year, we fervently hope that by the time we put them under Christmas trees or give them for Hanukkah, the grief that now staggers us will have receded.

MARK FINKENSTAEDT

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Star-Spangled Principles

FROM THE SECRETARY

THE SMITHSONIAN HAS BEEN AN AMERICAN INSTITUtion since 1846, through the Civil War, two world wars, Korea, Vietnam, Desert Storm and other great challenges. We don't like to close our doors—ever. We did on September 11. We reopened those doors the very next day to keep the historical evidence of America's spirit accessible to all.

Throughout its 155-year history, the Smithsonian has performed an invaluable service for America. Stewardship of the objects and stories of our struggle for democracy is a responsibility every person at the Institution accepts with seriousness, even awe. The icons of our history remind us of our willingness to fight for the values we hold dear, our ability to withstand adversity and our capacity to rebuild, no matter the damage we have sustained.

In any national crisis, our country's flag becomes ubiquitous, symbolizing who we are and what we stand for. We are privileged to display the Star-Spangled Banner. During the War of 1812, this famous flag survived bombardment and inspired the words that became our national anthem. Now, in full view of the public, the Star-Spangled Banner is undergoing major conservation to extend its life by as much as 500 years.

Conservation of the Star-Spangled Banner will be finished in late 2002.

Another object from the War of 1812 reminds us that the nation's capital has been attacked before, survived and been built anew. We have a charred timber believed to have endured the burning of the White House, on August 24, 1814. That day, unflappable First Lady Dolley Madison refused to leave the mansion until she had saved a wagonload of treasures.

Today, thousands of such treasures are in our collections, allowing us to mount exhibitions such as "The American Presidency: A Glorious Burden." In it are the wooden laptop desk on which Jefferson wrote the Declaration of Independence, the hat Lincoln wore the night he was assassinated, and the microphones FDR used for his fireside chats, reminding us that the only thing we had to fear was fear itself. These items recall our challenges and demonstrate that the American people prevail over adversity.

For stories of ordinary families who rose to these challenges, visit our exhibition "Within These Walls," in which a 200-year-old Massachusetts house tells the tales of five families who lived in it over the decades. Abraham Dodge, its third owner, fought at the Battle of Bunker Hill. More than 150 years later, Mary Scott and her family lived in the house during World War II. Mary's sons served in the Armed Forces; her daughter made fuses for antiaircraft projectiles.

Exhibits at the Smithsonian also show the threat troubled times pose for a society designed to provide "liberty and justice for all." "A More Perfect Union" examines the experiences of Japanese Americans during World War II. It documents the ways constitutional freedoms were ignored for almost 120,000 Japanese Americans—two-thirds of them United States citizens—forced to relocate to detention camps.

Nonetheless, some 33,000 Americans of Japanese ancestry served in the U.S. military. The 100th Battalion/442nd Regimental Combat Team, composed almost entirely of Japanese Americans from Hawaii and the detention camps, was the most decorated American unit of its size. On display are several of its awards, including a Medal of Honor, calling to mind Walt Whitman's view that America is a "nation of nations."

The principles enumerated in the Declaration of Independence and the Constitution have united us for more than two centuries. Throughout our history, our leaders, and ordinary men, women and children, have stepped up to defend them. They have faced down kings, dictators, assassins and terrorists, proclaiming "You will not prevail . . . we will." The Star-Spangled Banner and countless other treasures bear witness to America's indomitable spirit and underscore the resilience of our national character.

LAWRENCE M. SMALL, SECRETARY

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RENAISSANCE PORTRAITS

THE SEPTEMBER 2001 COVER OF Leonardo's portrait of Ginevra de' Benci reminded me of the last time my wife and I visited the National Gallery. We walked into the room where this magnificent portrait is displayed and were awestruck by its beauty. It was so well cared for that it looked as though it had just been painted. Leonardo's genius is evident in how convincingly he captured Ginevra's skin tone, color and subtle details; she came alive on the canvas.

Ira R. Cohen
Middletown, Connecticut

THE COMPUTER DID A POOR JOB OF finishing the portrait of Ginevra. Those hands look like my old uncle Ira's who was at one time bull pen catcher for the Brooklyn Dodgers.

Jack Schleh
Spring Hill, Florida

Ginevra's hands were adapted from a Leonardo drawing (above right) widely believed to be a study for his portrait of her. The digital re-creation is meant to help people imagine what the original painting might have looked like. Ed.

THE OBJECT AT HAND

MY MOTHER GAVE THE PURSE IN Christian Moen's article ("Mamie's Purse") to Mrs. Eisenhower as a gift for the 1953 Inaugural Ball. "With love from the Levy Hermanos family" is imprinted inside the bag. After the ball, Mamie called my mother to say: "They [the Smithsonian] not only want my dress but they want the bag as well!" So my mother called Nettie Rosenstein to duplicate the bag.

My parents and President and Mrs. Eisenhower met in the Philippines in the 1930s and maintained a very close friendship throughout the rest of their lives. My late father never forgot having to pay for two evening bags.

Robert L. Hermanos
New York, New York

POTHUNTERS

WITH HIS "CASE OF THE PURLOINED Pots," Kent Black has given us an interesting view of police work and prosecution in an unusual setting. But what was the perpetrators' sentence?

R. E. Wimmer
Canoga Park, California

The Quarrells were sentenced to serve 12 months and one day in prison and to pay $19,615 in restitution. Both men have filed appeals. Ed.

BHUTAN

REGARDING RICHARD CONNIFF AND Harry Marshall's article "In the Realm Of Virtual Reality," the women convicted of witchcraft in New England were hanged, not burned. The last execution took place September 22, 1692, in Massachusetts. In all, 36 "witches" were executed.

Daria Witt
Boca Raton, Florida

MIDWAY

TIMOTHY FOOTE'S ARTICLE ON THE gooneys of Midway reminded me of when I was stationed there in 1961.

We would get heavy rains, and the ground took so long to drain that water would pond up. I've seen chicks sitting on their nests up to their necks in water. Many drowned.

Jerry Decker
Rolla, Missouri

I WISH THE EXCELLENT SUMMER PROgrams of the University of Hawai'i-Hilo had been mentioned. They offer one- and two-week on-site classes. Check their Web page for specifics.

Wayne L. White
North Hills, California

DON FOSTER

I FIND IT IRONIC THAT IN "DON Foster Has a Way With Words," author David Roberts refers to Eric Robert Rudolph as, among other things, a "debunker of the Holocaust." This in an article about word usage. *Webster's* defines "bunk" as "something pretentious and empty or plausible but erroneous, as a speech, an opinion or doctrine" and "to debunk, to divest of 'bunk.'" Those who would deny the historical fact of the Holocaust are more accurately described as "Holocaust deniers." Facts may be denied by the ignorant or bigoted, but one cannot "debunk" a fact.

Norman Fried
Oceanside, California

WRITE TO SMITHSONIAN

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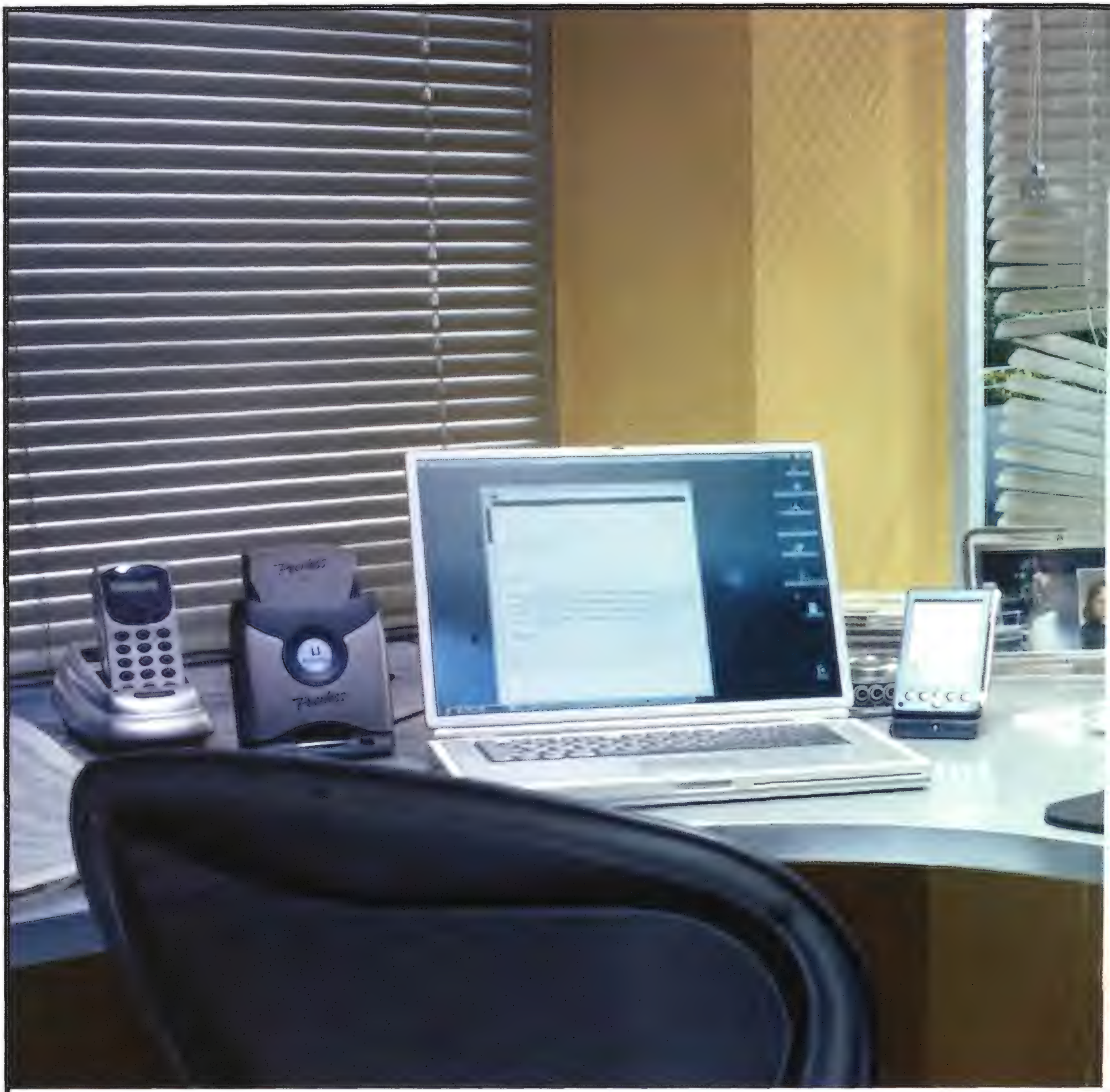

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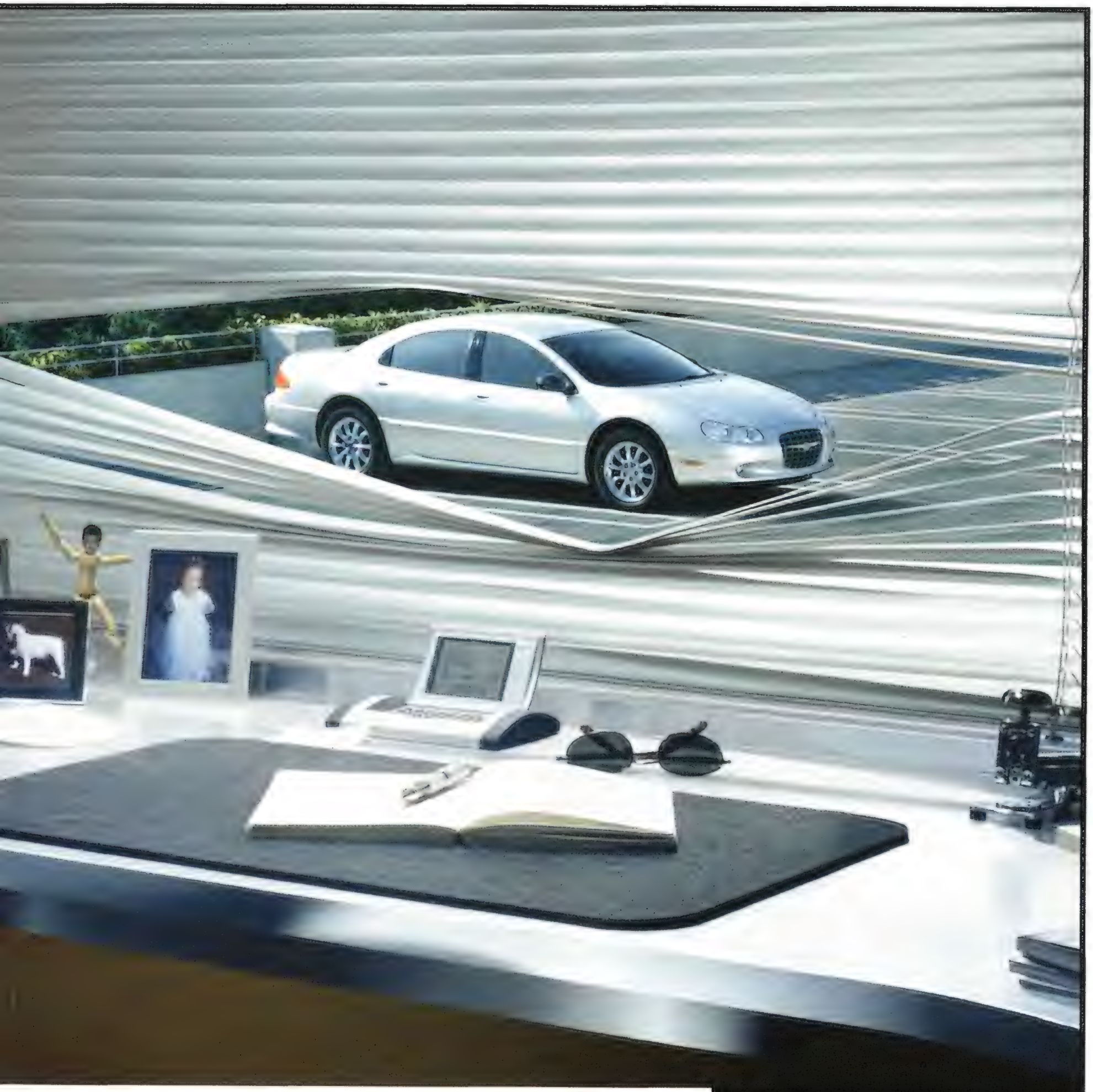

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PRESENCE OF MIND

Mongrel Nation

TIME AND AGAIN, AMERICA HAS DEMONSTRATED A RESILIENCE THAT IS ROOTED IN THE REMARKABLE DIVERSITY OF HER PEOPLE

BY GEOFFREY C. WARD

Across the country, Americans responded to terrorist attacks by waving Old Glory.

DYLAN MOORE/THE DAILY JOURNAL/AP

NOTHING LIKE WHAT TOOK PLACE in New York and Washington on September 11 has ever happened here before. It was unprecedented both in the scale of human damage done and the difficulty of hunting down those who did it. The President has said that we are in for a long, shadowy struggle unlike any we have ever waged. The question is whether this generation of Americans—impatient, unfamiliar with sacrifice, ignorant of the distant world from which the danger comes—will be up to the task.

History can't tell us. Each generation must define itself. But it may be helpful, both as a caution to our current adversaries and as some comfort to ourselves, to remember what earlier generations of Americans did when faced with challenges as great as this one.

Another devastating assault on New York City almost ended the American experiment in self-government before it could get started. In June of 1776, more than 100 British vessels filled with troops anchored off Staten Island—so many that it seemed to one American volunteer as if "all London was afloat." When actual fighting began soon thereafter, George Washington's outnumbered, undertrained force was quickly driven out. Fires destroyed a third of the city, thousands of its terrified residents fled, and its economy collapsed. "I feel mad, vexed, sick and sorry," wrote Colonel Henry Knox. "This is a most terrible event: its consequences are justly to be dreaded." A British officer was delighted: "The fact is [the rebel] army is broken all to pieces, and the spirits of their leaders and their abettors is also broken. . . . I think one may venture to pronounce that it is well nigh over with them."

It was not over, of course. Washington and his army went on to outlast, if not outfight, the mightiest military force on earth. John Adams was surely right when he called ours "this mighty Revolution." It was the first war ever fought in defense of the inalienable rights of all mankind, the first whose outcome could truly be said to matter to every man and woman on earth, the opening signal—distant now but still distinctly heard—for two centuries of revolutions, first in Europe, then in South America, Asia, Africa. It was also the first revolution to declare that legitimate government rests on the consent of the governed; the first to seek to establish a society based on classless equality (save for the tragic exception of black slavery); and the first to proclaim religious freedom.

Little wonder that every subsequent American generation has seen itself as wanting when compared with that of the Founders. Even the young Abraham Lincoln believed the Americans of his time would never be able to match the achievements of the "*once* hardy, brave and patriotic, but *now* lamented and departed race of [our] an-

cestors." Yet when the time of testing came for him and his contemporaries, they did not flinch. It took four ghastly years and cost 620,000 lives, but when the Civil War was finally over, the sin of slavery had been expunged, the Union had been restored and democratic government—Lincoln's "last best hope of earth"—had been preserved.

That American victory, like all our victories, was won by a remarkably diverse people. From the first, our adversaries have mistaken that central strength as weakness. "You can have no conception of what kind of men composed their officers," wrote a Briton of some prisoners he'd captured not long after New York's fall. "[One] was a blacksmith, another a hatter . . . there was a butcher . . . a tanner, a shoemaker . . . yet they all pretended to be gentlemen." Some in the Confederacy believed the Union cause was doomed because the Yankee Army included African-Americans and immigrants from everywhere. "[It] is filled up with the scum of creation," wrote one of Braxton Bragg's privates, "and ours with the best blood of the grand old Southland." Adolf Hitler had his own version of that view: Americans would never be able to defeat the Thousand-Year Reich, he assured his aides, because they were a mongrel people.

We *are* a mongrel people, and at our best, we glory in it. We've often been at our best since the events of this September. Everywhere, there have been signs of the same kind of resilience that saw our ancestors through—in the search-and-rescue teams made up by Americans of every color and from all over the country, toiling day and night amid the twisted steel; federal officials urging tolerance toward fellow Americans; ordinary people returning to their lives, determined not to surrender to terror.

As we enter into this new and dangerous era, we might keep in mind that 218 years ago this month George Washington returned in triumph to the charred city he had been forced to abandon seven years earlier. The United States had won their independence. But a token British force remained in Manhattan to cover the evacuation of loyalists. November 25, 1783, was the appointed day for them to leave, and Washington and what remained of his weary army wanted to see them go. As the Americans marched slowly down Manhattan Island that morning, the scene was eerie, unsettling: block after block of burned-out buildings, one witness remembered, that "cast [their] grim shadows upon the pavement, imparting an unearthly aspect. . . ." But when the troops reached the Battery, as the redcoats and their sympathizers rowed out to the ships that were to take them away, an American sailor clambered up the flagpole atop Fort George, pulled down the royal ensign and replaced it with the Stars and Stripes. The wind caught it, and soldiers and New Yorkers alike cheered as the American flag flew once again from the tip of Manhattan, just a few blocks from where the twin towers of the World Trade Center would one day stand.

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PHENOMENA

& CURIOSITIES

Heavenly Harbingers

HIGH ALTITUDE, NIGHT-SHINING CLOUDS ARE BECOMING MORE COMMON, WHICH COULD SIGNAL CLIMATE CHANGES

BY MICHAEL H. STEVENS

North of Juneau, Alaska, noctilucent clouds put on a spectacular show one midnight in July. They are not uncommon at this latitude.

MORE THAN AN HOUR AFTER sunset a veil of glowing clouds appears low in the northern sky. Whirls and billows are visible as the sky shines. What is going on? Few Americans have witnessed this phenomenon, which is known as noctilucent, or night-shining, clouds (NLCs). That's because NLCs usually appear north of 50 degrees latitude, which in North America lies just above the Canadian border. "Usually," but this may be changing.

NLCs form in a narrow region two miles thick, 50 miles above the Earth's surface, more than ten times higher than typical clouds, and over seven times higher than commercial airplanes fly. They probably are made of water ice crystals, and they are still in sunlight when night has fallen on the ground below.

Typically, they are seen above the polar regions in early summer, when a weather pattern of rising and cooling air drives temperatures below -220 degrees Fahrenheit, lower than anywhere else in the Earth's atmosphere.

The first unambiguous, published description of NLCs was written by Robert C. Leslie, who observed the phenomenon from Southampton, England, in July 1885. In a letter to the journal *Nature*, he wrote:

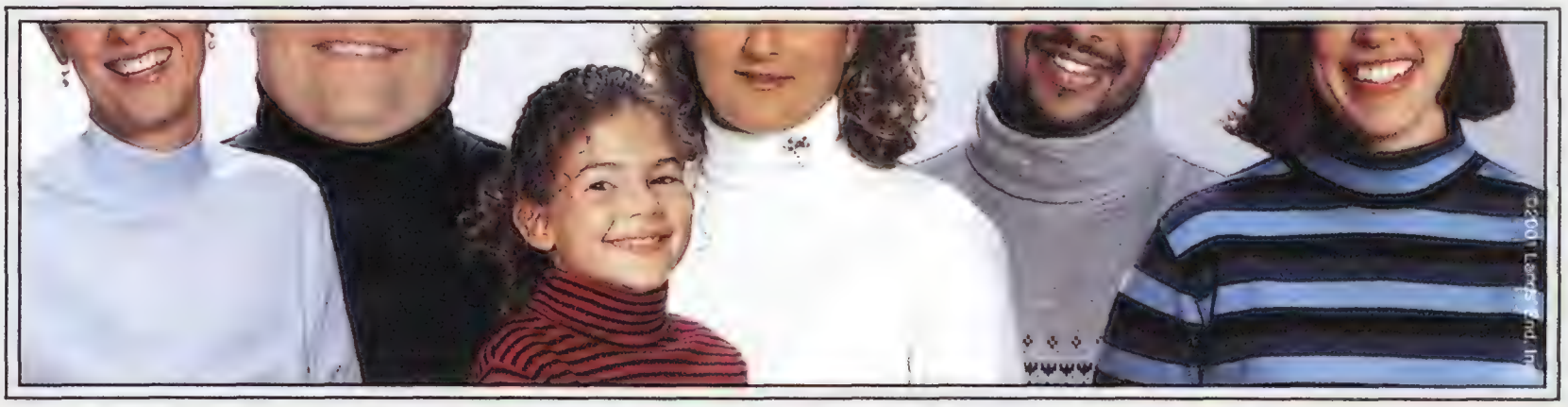
"Ever since the sunsets of 1883 and last year there has been at times an abnormal glare both before and after sundown. But I have seen nothing in the way of twilight effect so strange as that of Monday evening, the 6th, when about 10 pm a sea of luminous silvery white cloud lay above a belt of ordinary clear twilight sky, which was rather low in tone and colour. These clouds were wave-like in form, and evidently at a great elevation, and though they must have received their light from the sun, it was not easy to think so, as upon the dark sky they looked brighter and paler than clouds under a full moon. A friend who was with me aptly compared the light on these clouds to that which shines from white phosphor paint."

Coordinated ground-based observations show that the number of NLCs is growing by the decade. As sightings increase, scientists want to know if NLCs are harbingers of more widespread change in the Earth's atmosphere.

My first encounter with NLCs came as a complete surprise, on a muggy night in Florida in August 1997. I was on a small science team at Cape Kennedy working the midnight-to-noon shift during the second mission of the Middle Atmosphere High Resolution Spectrograph Investigation (MAHRSI), launched aboard the space shuttle a week earlier. The instrument, about the size of a coffee table, rode on a satellite deployed by the space shuttle. I had been to Cape Kennedy for a couple of simulations, but this was the first time I had participated in an actual mission.

We were measuring the ultraviolet emission of hydroxyl (OH). Near

RICHARD A. KEEN



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NLCs, OH is created when water vapor is destroyed by solar radiation. OH is also very reactive, and lower in the atmosphere it can contribute to the destruction of ozone. We wanted to find out how the observed OH compared with model predictions.

Working around the clock at the Payload Operations Center, a small building in a quiet section of Cape Kennedy, we monitored data sent from the satellite. One night I was among a handful of sleepy scientists huddled around a few flickering monitors as the data trickled down from space.

MAHRSI simultaneously observed sunlight scattered from the Earth's atmosphere as well as OH. This background atmosphere normally becomes steadily brighter at lower altitudes. That night we were unwittingly collecting data around NLCs.

Staring at the monitor at 2 A.M., I noticed that as the satellite reached the Arctic, the data behaved strangely at the top of the scans: bright at one altitude, dim right below that, then bright again at the next lowest altitude.

Now, experience as a research scientist has taught me that data frequently look peculiar. In fact, for every hundred times I say to myself, "Wow, that's interesting," there is maybe one time where something new is actually revealed. This is especially true when looking at uncalibrated data at 2 A.M. There remained a few orbits, and opportunities to see new Arctic data, before sunrise in Florida. At 7 A.M., Robert Conway, the principal investigator of MAHRSI, made his customary telephone call to the overnight team from his hotel room a few miles away.

"What's hot?" he asked, regrettably not wasting any time.

"Well, not much really," I began, unwilling to play the role of overenthusiastic young scientist imagining things in data.

But he sensed my excitement. "What? What is it?" he prodded. I took a breath and continued.

"It's the high latitude data. There seems to be a lot of structure at the top of the emission profile," I said, meaning that the Arctic scans had bumps and wiggles near the top.

"I'll be right there," Conway said. He arrived soon after and we scrapped our carefully planned observations, to scan the higher altitudes more rapidly.

As the astronauts prepared to retrieve the satellite, Conway went directly to the operators in the next room to negotiate for the earliest possible opportunity to communicate with MAHRSI. He didn't have time to look at the data carefully. Meanwhile, I squinted at the monitor, uncertain of exactly what I was seeing as MAHRSI relentlessly approached the Arctic again. I will never forget the feelings of tense excitement that crawled through me that morning.

In the end, we were able to send up the commands expeditiously, and MAHRSI performed flawlessly. A few weeks later I looked more closely at the data and found unambiguous evidence of late-season NLCs. The bumps and wiggles near the top of the Arctic scans were due to the scattering of sunlight by tiny ice crystals in the atmosphere.

Then, in 1999, a spectacular display of NLCs was observed in June over Colorado and Utah—much farther south (about 40 degrees N) than they are usually observed. This piqued the curiosity of the public and left scientists scratching their heads.

Even more provocative is evidence from Europe showing that NLC sightings overall increased in the late 20th century. Nobody really knows why.

Last year, NASA selected for study a space mission exclusively dedicated to understanding why NLCs form and why they vary. If chosen to fly, this mission will measure NLCs, temperature, and all the constituents thought critical to ice cloud formation. Measuring OH, for example, a proxy for water vapor, helps calculate what is available for NLC growth. By monitoring both NLCs and their environment in this way, scientists seek to identify their catalyst for change.

Whether they are an "abnormal glare" observed from the ground or a lofty layer of scattered sunlight observed from space, these clouds continue to spark interest. Given the increase in sightings, many who study NLCs would like to know how humanity influences them. Perhaps another accidental discovery will bring us closer to the answer.

The wave forms may be a trick of perspective in this view from Kustavi, Finland, at 11 P.M. local time. If the clouds were overhead, patterns like this might not appear.

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Brief Summary of
Prescribing Information as of November 2000

ALLEGRA-D®
(fexofenadine HCl 60 mg and pseudoephedrine HCl 120 mg) Extended-Release Tablets

INDICATIONS AND USAGE
ALLEGRA-D is indicated for the relief of symptoms associated with seasonal allergic rhinitis in adults and children 12 years of age and older. Symptoms treated effectively include sneezing, rhinorrhea, itchy nose/palate/ and/or throat, itchy/watery/red eyes, and nasal congestion.
ALLEGRA-D should be administered when both the antihistaminic properties of fexofenadine hydrochloride and the nasal decongestant properties of pseudoephedrine hydrochloride are desired (see CLINICAL PHARMACOLOGY).

CONTRAINDICATIONS
ALLEGRA-D is contraindicated in patients with known hypersensitivity to any of its ingredients.
Due to its pseudoephedrine component, ALLEGRA-D is contraindicated in patients with narrow-angle glaucoma or urinary retention, and in patients receiving monoamine oxidase (MAO) inhibitor therapy or within fourteen (14) days of stopping such treatment (see Drug Interactions section). It is also contraindicated in patients with severe hypertension, or severe coronary artery disease, and in those who have shown hypersensitivity or idiosyncrasy to its components, to adrenergic agents, or to other drugs of similar chemical structures. Manifestations of patient idiosyncrasy to adrenergic agents include: insomnia, dizziness, weakness, *tremor, or arrhythmias*

WARNINGS
Sympathomimetic amines should be used judiciously and sparingly in patients with hypertension, diabetes mellitus, ischemic heart disease, increased intraocular pressure, hyperthyroidism, renal impairment, or prostatic hypertrophy (see CONTRAINDICATIONS)
Sympathomimetic amines may produce central nervous system stimulation with convulsions or cardiovascular collapse with accompanying hypotension.

PRECAUTIONS
General
Due to its pseudoephedrine component, ALLEGRA-D should be used with caution in patients with hypertension, diabetes mellitus, *ischemic heart disease, increased intraocular pressure, hyperthyroidism, renal impairment, or prostatic hypertrophy* (see WARNINGS and CONTRAINDICATIONS). Patients with decreased renal function should be given a lower initial dose (one tablet per day) because they have reduced elimination of fexofenadine and pseudoephedrine (See CLINICAL PHARMACOLOGY and DOSAGE AND ADMINISTRATION)

Information for Patients
Patients taking ALLEGRA-D tablets should receive the following information: ALLEGRA-D tablets are prescribed for the relief of symptoms of seasonal allergic rhinitis. Patients should be instructed to take ALLEGRA-D tablets only as prescribed. **Do not exceed the recommended dose.** If nervousness, dizziness, or sleeplessness occur, discontinue use and consult the doctor. Patients should also be advised against the concurrent use of ALLEGRA-D tablets with over-the-counter antihistamines and decongestants
The product should not be used by patients who are hypersensitive to it or to any of its ingredients. Due to its pseudoephedrine *component, this product should not be used by patients with narrow-angle glaucoma, urinary retention, or by patients receiving* a monoamine oxidase (MAO) inhibitor or within 14 days of stopping use of MAO inhibitor. It also should not be used by patients with severe hypertension or severe coronary artery disease.
Patients should be told that this product should be used in pregnancy or lactation only if the potential benefit justifies the potential risk to the fetus or nursing infant. Patients should be cautioned not to break or chew the tablet. Patients should be directed to swallow the tablet whole. Patients should be instructed not to take the tablet with food. Patients should also be instructed to store the medication in a tightly closed container in a cool, dry place, away from children.

Drug Interactions
Fexofenadine hydrochloride and pseudoephedrine hydrochloride do not influence the pharmacokinetics of each other when administered concomitantly
Fexofenadine has been shown to exhibit minimal (ca. 5%) metabolism. However, co-administration of fexofenadine with ketoconazole and erythromycin led to increased plasma levels of fexofenadine. Fexofenadine had no effect on the pharmacokinetics of erythromycin and ketoconazole. In two separate studies, fexofenadine HCl 120 mg BID (twice the recommended dose) was co-administered with erythromycin 500 mg every 8 hours or ketoconazole 400 mg once daily under steady-state conditions to normal, healthy volunteers (n=24, each study). No differences in adverse events or QT_c interval were observed when subjects were administered fexofenadine HCl alone or in combination with erythromycin or ketoconazole. The findings of these studies are summarized in the following table

Effects on Steady-State Fexofenadine Pharmacokinetics After 7 Days of Co-Administration with Fexofenadine Hydrochloride 120 mg Every 12 Hours (twice recommended dose) in Normal Volunteers (n=24)

Concomitant Drug	$C_{max\ SS}$ *(Peak plasma concentration)*	$AUC_{SS}(0\text{-}12h)$ *(Extent of systemic exposure)*
Erythromycin (500 mg every 8 hrs)	+82%	+109%
Ketoconazole (400 mg once daily)	+135%	+164%

The changes in plasma levels were within the range of plasma levels achieved in adequate and well-controlled clinical trials
The mechanism of these interactions has been evaluated in *in vitro, in situ* and *in vivo* animal models. These studies indicate that ketoconazole or erythromycin co-administration enhances fexofenadine gastrointestinal absorption. In vivo animal studies also suggest that *in addition to enhancing absorption, ketoconazole decreases fexofenadine gastrointestinal secretion, while erythro*mycin may also decrease biliary excretion.
ALLEGRA-D tablets (pseudoephedrine component) are contraindicated in patients taking monoamine oxidase inhibitors and for 14 days after stopping use of an MAO inhibitor. Concomitant use with antihypertensive drugs which interfere with sympathetic activity (eg, methyldopa, mecamylamine, and reserpine) may reduce their antihypertensive effects. Increased ectopic pacemaker activity can occur when pseudoephedrine is used concomitantly with digitalis.
Care should be taken in the administration of ALLEGRA-D concomitantly with other sympathomimetic amines because combined effects on the cardiovascular system may be harmful to the patient (see WARNINGS).

Carcinogenesis, Mutagenesis, Impairment of Fertility
There are no animal or in vitro studies on the combination product fexofenadine hydrochloride and pseudoephedrine hydrochlo*ride to evaluate carcinogenesis, mutagenesis, or impairment of fertility.*
The carcinogenic potential and reproductive toxicity of fexofenadine hydrochloride were assessed using terfenadine studies with adequate fexofenadine exposure (area-under-the plasma concentration versus time curve [AUC]). No evidence of carcinogenicity was observed when mice and rats were given daily oral doses up to 150 mg/kg of terfenadine for 18 and 24 months, respectively. In both species, 150 mg/kg of terfenadine produced AUC values of fexofenadine that were approximately 3 times the human AUC at the maximum recommended daily oral dose in adults.
Two-year feeding studies in rats and mice conducted under the auspices of the National Toxicology Program (NTP) demonstrated no evidence of carcinogenic potential with ephedrine sulfate, a structurally related drug with pharmacological properties similar to pseudoephedrine, at doses up to 10 and 27 mg/kg, respectively (approximately 1/3 and 1/2, respectively, the maximum recommended daily oral dose of pseudoephedrine hydrochloride in adults on a mg/m² basis).
In in-vitro (Bacterial Reverse Mutation, CHO/HGPRT Forward Mutation, and Rat Lymphocyte Chromosomal Aberration assays) and in vivo (Mouse Bone Marrow Micronucleus assay) tests, fexofenadine hydrochloride revealed no evidence of mutagenicity
Reproduction and fertility studies with terfenadine in rats produced no effect on male or female fertility at oral doses up to 300 mg/kg/day. However, reduced implants and post implantation losses were reported at 300 mg/kg. A reduction in implants was also observed at an oral dose of 150 mg/kg/day. Oral doses of 150 and 300 mg/kg of terfenadine produced AUC values of fexofenadine that were approximately 3 and 4 times, respectively, the human AUC at the maximum recommended daily oral dose in adults.

Pregnancy
Teratogenic Effects: Category C. Terfenadine alone was not teratogenic in rats and rabbits at oral doses up to 300 mg/kg; 300 mg/kg of terfenadine produced fexofenadine AUC values that were approximately 4 and 30 times, respectively, the human AUC at the maximum recommended daily oral dose in adults.
The combination of terfenadine and pseudoephedrine hydrochloride in a ratio of 1:2 by weight was studied in rats and rabbits. In *rats, an oral combination dose of 150/300 mg/kg produced reduced fetal weight and delayed ossification with a finding of wavy* ribs. The dose of 150 mg/kg of terfenadine in rats produced an AUC value of fexofenadine that was approximately 3 times the human AUC at the maximum recommended daily oral dose in adults. The dose of 300 mg/kg of pseudoephedrine hydrochloride in rats was approximately 10 times the maximum recommended daily oral dose in adults on a mg/m² basis. In rabbits, an oral combination dose of 100/200 mg/kg produced decreased fetal weight. By extrapolation, the AUC of fexofenadine for 100 mg/kg orally of terfenadine was approximately 10 times the human AUC at the maximum recommended daily oral dose in adults. The dose of 200 mg/kg of pseudoephedrine hydrochloride was approximately 15 times the maximum recommended daily oral dose in adults on a mg/m² basis.
There are no adequate and well-controlled studies in pregnant women. ALLEGRA-D should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
Nonteratogenic Effects. *Dose-related decreases in pup weight gain and survival were observed in rats exposed to an oral dose of* 150 mg/kg of terfenadine; this dose produced an AUC of fexofenadine that was approximately 3 times the human AUC at the maximum recommended daily oral dose in adults.

Nursing Mothers
It is not known if fexofenadine is excreted in human milk. Because many drugs are excreted in human milk, caution should be used when fexofenadine hydrochloride is administered to a nursing woman. Pseudoephedrine hydrochloride administered alone distributes into breast milk of lactating human females. Pseudoephedrine concentrations in milk are consistently higher than those in plasma. The total amount of drug in milk as judged by AUC is 2 to 3 times greater than the plasma AUC. The fraction of a pseudoephedrine dose excreted in milk is estimated to be 0.4% to 0.7%. A decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother. Caution should be exercised when *ALLEGRA-D is administered to nursing women*

Pediatric Use
Safety and effectiveness of ALLEGRA-D in pediatric patients under the age of 12 years have not been established

Geriatric Use
Clinical studies of ALLEGRA-D did not include sufficient numbers of patients aged 65 and older to determine whether they respond differently from younger patients. Other reported clinical experience has not identified differences in responses between the elderly and younger patients, although the elderly are more likely to have adverse reactions to sympathomimetic amines. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy.
The pseudoephedrine component of ALLEGRA-D is known to be substantially excreted by the kidney, and the risk of toxic reactions to this drug may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and it may be useful to monitor renal function

ADVERSE REACTIONS
ALLEGRA-D
In one clinical trial (n=651) in which 215 patients with seasonal allergic rhinitis received the 60 mg fexofenadine hydrochloride/120 mg pseudoephedrine hydrochloride combination tablet twice daily for up to 2 weeks, adverse events were similar to those reported either in patients receiving fexofenadine hydrochloride 60 mg alone (n=218 patients) or in patients receiving pseudoephedrine hydrochloride 120 mg alone (n=218) A placebo group was not included in this study
The percent of patients who withdrew prematurely because of adverse events was 3.7% for the fexofenadine hydrochloride/pseudoephedrine hydrochloride combination group, 0.5% for the fexofenadine hydrochloride group, and 4.1% for the pseudoephedrine hydrochloride group. All adverse events that were reported by greater than 1% of patients who received the recommended daily dose of the fexofenadine hydrochloride/pseudoephedrine hydrochloride combination are listed in the following table

Adverse Experiences Reported in One Active-Controlled Seasonal Allergic Rhinitis Clinical Trial at Rates of Greater than 1%

Adverse Experience	60 mg Fexofenadine Hydrochloride/120 mg Pseudoephedrine Hydrochloride Combination Tablet Twice Daily (n=215)	Fexofenadine Hydrochloride 60 mg Twice Daily (n=218)	Pseudoephedrine Hydrochloride 120 mg Twice Daily (n=218)
Headache	13.0%	11.5%	17.4%
Insomnia	12.6%	3.2%	13.3%
Nausea	7.4%	0.5%	5.0%
Dry Mouth	2.8%	0.5%	5.5%
Dyspepsia	2.8%	0.5%	0.9%
Throat Irritation	2.3%	1.8%	0.5%
Dizziness	1.9%	0.0%	3.2%
Agitation	1.9%	0.0%	1.4%
Back Pain	1.9%	0.5%	0.5%
Palpitation	1.9%	0.0%	0.9%
Nervousness	1.4%	0.5%	1.8%
Anxiety	1.4%	0.0%	1.4%
Upper Respiratory Infection	1.4%	0.9%	0.9%
Abdominal Pain	1.4%	0.5%	0.5%

Many of the adverse events occurring in the fexofenadine hydrochloride/pseudoephedrine hydrochloride combination group were adverse events also reported predominately in the pseudoephedrine hydrochloride group, such as insomnia, headache, nausea, dry mouth, dizziness, agitation, nervousness, anxiety, and palpitation.

Fexofenadine Hydrochloride
In placebo-controlled clinical trials, which included 2461 patients receiving fexofenadine hydrochloride at doses of 20 mg to 240 mg twice daily, adverse events were similar in fexofenadine hydrochloride and placebo-treated patients. The incidence of adverse events, including drowsiness, was not dose related and was similar across subgroups defined by age, gender, and race. The percent of patients who withdrew prematurely because of adverse events was 2.2% with fexofenadine hydrochloride vs 3.3% with placebo.
Events that have been reported during controlled clinical trials involving seasonal allergic rhinitis and chronic idiopathic urticaria patients with incidences less than 1% and similar to placebo and have been rarely reported during postmarketing surveillance include: insomnia, nervousness, and sleep disorders or paroniria. In rare cases, rash, urticaria, pruritus and hypersensitivity reactions with manifestations such as angioedema, chest tightness, dyspnea, flushing and systemic anaphylaxis have been reported

Pseudoephedrine Hydrochloride
Pseudoephedrine hydrochloride may cause mild CNS stimulation in hypersensitive patients. Nervousness, excitability, restlessness, dizziness, weakness, or insomnia may occur. Headache, drowsiness, tachycardia, palpitation, pressor activity, and cardiac arrhythmias have been reported. Sympathomimetic drugs have also been associated with other untoward effects such as fear, anxiety, tenseness, tremor, hallucinations, seizures, pallor, respiratory difficulty, dysuria, and cardiovascular collapse.

Prescribing Information as of November 2000

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US Patents 4,254,129; 5,375,693; 5,578,610
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1. **Which Allegra product did you purchase with this offer?**
( ) Allegra-D (for congestion) ( ) Other Allegra _____ mg

2. **Would you like to be reminded to refill your Allegra prescription?**
( ) Yes ( ) No

3. **When did you fill your Allegra prescription?**
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4. **When do you anticipate filling your next prescription?**
____/____/_____

5. **What allergy symptoms do you suffer from?**
( ) Runny nose ( ) Stuffy nose ( ) Nasal Congestion
( ) Red/itchy/watery eyes ( ) Itchy nose
( ) Itchy throat ( ) Sneezing

6. **When are you most affected by your seasonal allergies? (Check all that apply)**
( ) Spring ( ) Summer ( ) Fall ( ) Winter

7. **How are you currently treating your allergies? (Check all that apply)**
( ) Prescription medication
( ) Over the counter medication
( ) Not currently treating

8. **Out of the 365 days in a year how many days do you suffer from your allergies?**
( ) 0 – 30 days (1 month) ( ) 31 – 60 days (2 months)
( ) 61 – 90 days (3 months) ( ) 91 – 120 days (4 months)
( ) 121 – 180 days (5-6 months) ( ) 181 – 240 days (7-8 months)
( ) 241 – 300 days (9-10 months) ( ) 301 – 365 days (year round)

9. **Out of the 365 days in a year how many days do you take prescription medication for your allergies?**
( ) 0 – 30 days (1 month) ( ) 31 – 60 days (2 months)
( ) 61 – 90 days (3 months) ( ) 91 – 120 days (4 months)
( ) 121 – 180 days (5-6 months) ( ) 181 – 240 days (7-8 months)
( ) 241 – 300 days (9-10 months) ( ) 301 – 365 days (year round)

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Old Sneakers Never Die

FOR MUCH OF THE 20TH CENTURY, HOOPSTERS FROM PRO TO PICKUP LOVED THEIR CONVERSE CHUCK TAYLOR ALL STARS

BY ED LEIBOWITZ

NINETEEN-EIGHTEEN WAS THE YEAR AN OUTGOING, likable, six-foot-tall basketball player named Charles H. "Chuck" Taylor made the Indiana High School All-State Team. "He was a good shooter," says Bill Stearman, longtime coach of the North Columbus Indiana Bulldogs. "But he wasn't a Larry Bird or what's his name out there in California, Shaq O'Neal."

A good shooter and a natural salesman. After a stint as a semi-pro in Akron, Chuck Taylor moved on to the Converse Rubber Shoe Company's Chicago sales office. There he would have an impact on the game far more profound than any he had enjoyed as a player. In 1923 Converse put his name on the ankle patch of a shoe he'd helped to restyle, a high-top, black-and-white, vulcanized-rubber-and-canvas basketball shoe: the Converse Chuck Taylor All Star. For decades, Taylor drove trunk-loads of them around the United States, selling coaches and athletes on the twin blessings of All Stars and the sport of basketball.

Taylor's down-to-earth ambassadorship had won the man and his shoe such respect that Converse commanded nearly 90 percent of the basketball-shoe business by the late 1960s.

Black-and-white All Stars were still tumbling off Converse's Lumberton, North Carolina, assembly line when Converse created the "Stars & Bars" sneaker for the shoe's 75th birthday in 1992 and donated a pair to the Smithsonian's National Museum of American History. If the commemorative edition was as flamboyant as Old Glory flapping in a gale-force wind, Converse could be forgiven. By century's end, All Stars had found their way onto more than a billion feet. They had become an American artifact nearly as recognizable as another Smithsonian all-star—Francis Scott Key's Star-Spangled Banner.

While Chuck Taylor All Stars never had to face British cannon, by the start of the new millennium they had stood up to an onslaught nearly as withering—a changed athletic-shoe business dominated by high-performance technology, relentless marketing and cheap overseas labor.

All Stars still sported the eight aluminum porthole eyelets running up each side, a bulbous rubber toe, the ankle patch that bore Chuck Taylor's signature and, at the heel, a tag that proclaimed that this All Star was "Made in U.S.A." But the American All Star would barely outlast the 20th century. On March 31, 2001, the Lumberton assembly line spat out its last pair of Chuck Taylor high-tops. Some weeks later, a consortium led by sports-industry entrepreneurs William Simon and Marsden Cason purchased all rights to the Converse brand name. Today, joining the likes of Keds and Nike, Chuck Taylor All Stars are made in Asia.

Columbus, Indiana, high school basketball star Chuck Taylor (aloft) turned his on-court prowess into career success selling the classic athletic shoe that bears his name.

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A popular design since it appeared in 1992 to commemorate the shoe's 75th anniversary, the "Stars & Bars" version of the All Star remains in production overseas.

The demise of the American-made model marked not only the end of its patriotic heel patch but also production of the last major canvas-and-rubber sneaker in the United States. For almost a hundred years, the canvas sneaker had been a triumph of timeless design over marketing hype. In fact, it had begun as a by-product of America's great tire companies. B. F. Goodrich manufactured P. F. Flyers and Jack Purcell court shoes until 1972, when Converse took over its footwear line. U.S. Rubber, later renamed Uniroyal, produced Keds until that brand, too, was sold, to Stride Rite in 1979.

For almost a hundred years, the canvas sneaker had been a triumph of timeless design.

Among the American sneaker industry's Big Three, only Converse could trace its origins not to tires but to footwear. (Ironically, or perhaps fittingly, the failed tire venture of Marquis Converse, who had founded the company in 1908, plunged it into receivership in 1928. The shoe company would go through several more owners before its final bankruptcy this year.)

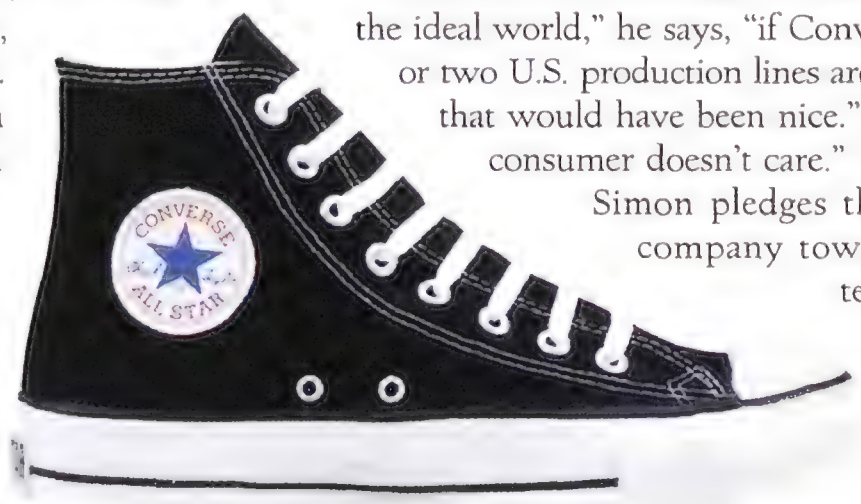
In retrospect, Chuck Taylor's death in 1969 had signaled the beginning of the decline of the shoe that bore his name. At the 1968 Summer Olympics in Mexico City, Adidas dominated track and field with its triple stripes, padded leather uppers, and soles fused not by vulcanization but by more durable cold-set glue. Adidas and Puma would dominate the '70s; Reebok and Nike the '80s. Unlike Converse, many of the new sneaker companies were not manufacturers; Nike, for example, has never produced a single shoe in a plant of its own, instead subcontracting the work to factories scattered around the world. With this manufacturing flexibility, the newcomers introduced ever-escalating technology and sticker prices, myriad design experiments, and leather, suede and nylon to vie with plain old canvas and rubber.

As Converse scrambled to make leather sneakers and to open its own biomechanics lab, the All Star, whose pivoting abilities, ankle support and nonskid sole had been championed for a half century, was repositioned as a shoe for nonathletes. It was no longer the choice of NBA and college power forwards but of the Rolling Stones on their 1989 "Steel Wheels" concert tour and of high school hipsters turned off by the slick marketing of Nike and Reebok.

Today, not even the North Columbus Indiana Bulldogs wear Chuck Taylors, which is not to say that coach Bill Stearman has lost the faith. "For traction on the floor," he says, "they're still the best shoe on the market." Stearman also cites their low cost and the fact that they dry out fast. But these advantages disappear when your pro-basketball hero—Shaquille O'Neal or Kobe Bryant or Michael Jordan—pushes Adidas, Reeboks or Nikes. "When they say that Michael Jordan wears these shoes," Stearman says, "the kids would wear a piece of paper if he did."

Even new owner William Simon can wax nostalgic. "In the ideal world," he says, "if Converse could have left one or two U.S. production lines around for the charm of it, that would have been nice." Then he adds: "But the consumer doesn't care."

Simon pledges that as he reorients the company toward high-performance, technology-laden athletic footwear, the All Star will remain. "We are going to build the casual footwear side around the Chuck Taylor," he says. Stay tuned.



The black-and-white Converse "Chuck Taylor" All Star has changed little since 1923, except that today it is made in Asia.

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POINTS OF INTEREST

Hallowed Ground

AN INVESTIGATION OF OLD GRAVE SITES IN NEW ENGLAND IS UNEARTHING HARD TRUTHS ABOUT YANKEES AND SLAVERY

BY LUCRETIA BINGHAM

"We don't disturb the dead in any way," says Warren Perry (at a dig with Gerald Sawyer, right) of his archaeological work on 18th-century slave burial grounds.

EVEN THOUGH THE MIDDAY SUN is high in the sky, my companions and I can hardly see the headstones lying half-hidden in this dense Connecticut forest. Warren Perry is an anthropologist at Central Connecticut State University in New Britain. Gerald Sawyer is working on a doctorate in archaeology from the City University of New York (CUNY), where he is also a graduate instructor. For the better part of three years now, they have been studying scores of humble grave sites scattered across my family's ancestral lands here in the rolling countryside near New London. These are the resting places of slaves who died more than two centuries ago.

As we walk from site to site, Sawyer, a tall man wearing jeans and sporting a ponytail, keeps up a running commentary. "Those cairns," he says, pointing toward mounds of rocks piled high in an oval shape, "are more like burial markers found in Guinea, West Africa, than anything in this country." He speculates that the mounds might represent traditional African burials, whereas the rounded headstones we just examined may designate the grave sites of slaves who became Christians. When I ask how people from Africa were able to survive our harsh Connecticut winters, Perry answers, "A lot of them didn't."

As the recent furor over Yale University's close ties with slaveholders in the 1700s and 1800s made clear, many Americans are just beginning to understand that for a long time slavery was as ubiquitous in the North as in the South. The first African captives arrived in Massachusetts in the middle part of the 1600s. A century later, there were more slaves in New York City than anywhere else in the colonies except Charleston, South Carolina. Despite the fact that Quakers condemned slavery in Philadelphia as early as 1693, there were at least 3,000 slaves in Pennsylvania by the mid-1700s, and Connecticut had more than 5,000. Although it's uncertain how many there were overall in New England, slaves at one time may have made up as much as 5 percent of the total population in Connecticut and 10 percent in Rhode Island.

According to Sawyer, Northern slaves worked much as slaves did in the South—farming, and doing industrial labor and household chores. "There were many large plantations in Connecticut, Massachusetts and Rhode Island," Sawyer says. "Most of them shipped agricultural goods to the West Indies in exchange for molasses, which was used to make rum. Newport, Rhode Island, alone had more than 30 distilleries in the mid-18th century."

Perry, an ebullient scholar whose long dreadlocks are flecked with gray, found out about the burial grounds from a local authority on black history in 1995. Not long after, he assigned Sawyer, then a graduate

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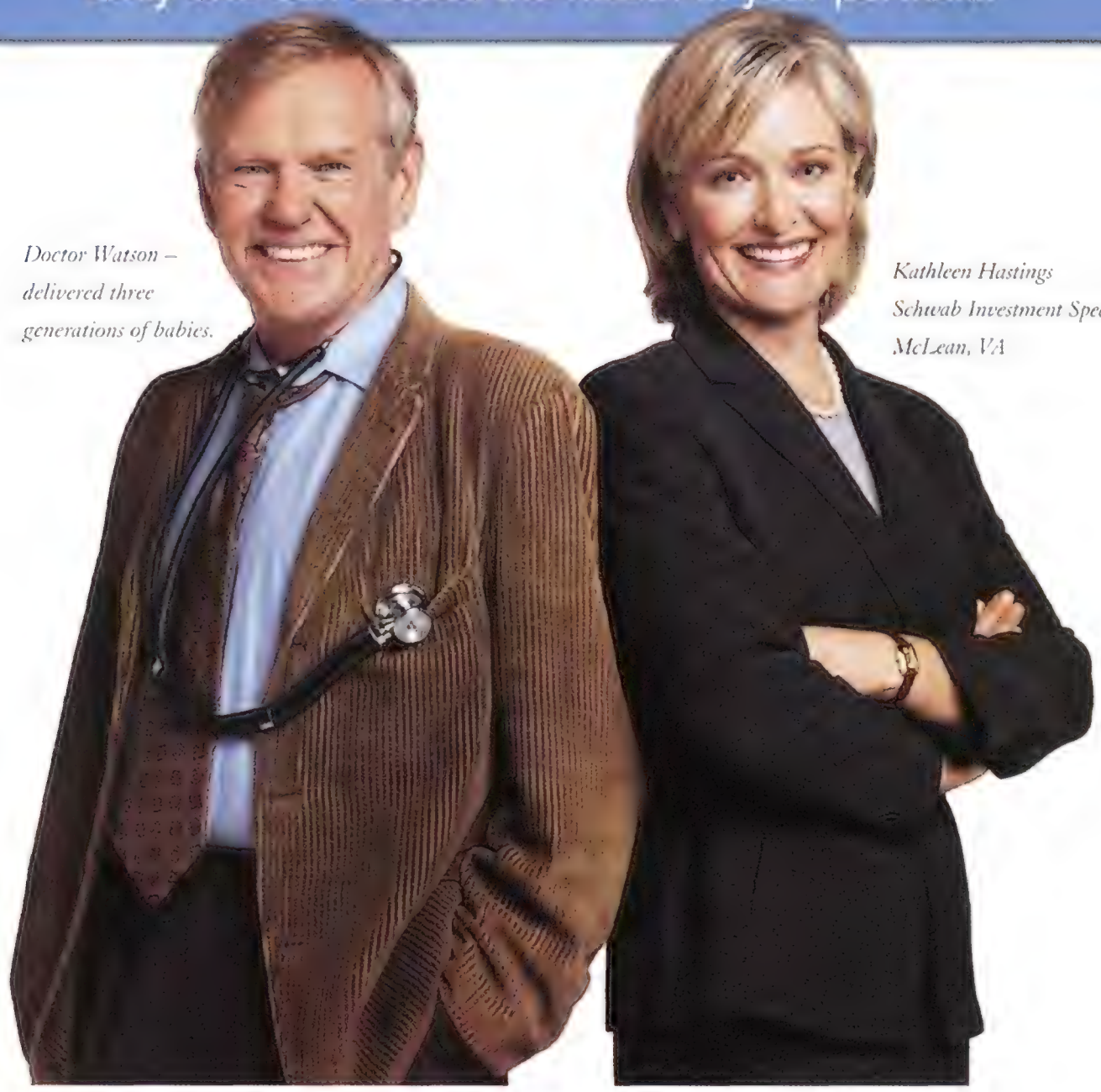

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student at CUNY, to head up a field study. To locate grave sites, Sawyer surveyed the land with an electronic device that detects disturbed soil. "Based on some of the old documents we've looked at," Sawyer tells me as we pause at the edge of the woods, "we think your people brought in as many as 60 captive families to clear the land." To verify that, he not only has to find their graves; he must also discover artifacts that conclusively identify the deceased as of African origin.

From where we stand, we can see one wing of the "great house" where my ancestor John Mumford and his descendants lived. High on a hill across the valley is the graveyard where my father, Mitchell Bingham, and his six brothers and many forebears, including several Lucretias, were laid to rest.

I've always been proud to be a Bingham. My family has lived in Connecticut for the better part of three centuries. We've been farmers, doctors, teachers, preachers. One Bingham was a United States Senator—Hiram, who served from 1925 to 1933. Over the years, everyone in the family has told stories about how we helped fugitive slaves escape to freedom on the Underground Railway. Not much has been said, though, about our own slaveholding past.

Even when a relative undertook some research on the subject 30 years ago, I didn't fully grasp what had transpired. By the time Sawyer and Perry began looking at the grave sites on our property, I'd started examining family records and accounts, and reading old books that had been gathering dust on my shelves for years. The Yankee slave trade "created much of the wealth and culture of Boston and Newport," I learned in one text on the subject.

As was the case in the South, Africans in the North were considered property to be passed along like furniture. The will of one Mumford listed 14 slaves in his "inventory." In an autobiography published in 1798, a former slave wrote: "I was bought on board by one Robertson Mumford, a steward of said vessel, for four gallons of rum and a piece of calico, and called VENTURE, on account of his having purchased me with his own private venture."

The author frequently revists her family's "summer camp" overlooking thousands of acres of former plantation lands.

When landholders no longer needed their slaves, or could not afford to keep them, large numbers were set free, most of them between the late 1600s and early 1700s. In 1690, a "black code" was written into Connecticut state law forbidding the wandering of slaves outside the towns to which they belonged without a pass from the owner. And so, since they had nowhere else to go, most abandoned slaves probably ended up squatting on inferior town lands usually referred to as "common land."

One morning, I drive down a country lane with Perry and Sawyer to a place just outside the Bingham property called New Salem. In the woods, I'm surprised to come across what looks like the remains of an entire village. There are dozens of three-sided stone structures here. "We think this was a settlement of freed captives who may have lived here with local Native Americans," Sawyer says. It's hard to imagine the kind of lives those squatters must have had to endure.

A while later, I find Sawyer and two students crouched over a burial site near the house. The area has been measured and divided into grids marked by string, and the archaeologists are methodically digging and sifting for artifacts, one grid at a time. Out of respect for the dead, they explore only the top four to eight inches of soil.

Sawyer tells me the painstaking work is paying off. He has turned up several dozen sherds of Mocha ware, a common pottery made in the 18th and early 19th centuries. In West Africa at that time, collections of small items precious to the dead in life—often including pottery—were ritualistically left on top of graves. These findings hint at the age of this burial site and the origins of at least some of my ancestors' slaves.

But that's not all. Sawyer shows me a timeworn headstone nearby. Photographs of it taken recently with special lighting techniques revealed the initials PH and two heart-shaped symbols which, in Ghana and elsewhere in Africa, are called *Sankofa*. "We know that a man named Pomp Henry was an African captive here in the mid-1700s," Sawyer says.

As I ponder this latest discovery, it occurs to me that Perry and Sawyer aren't just studying graves. They're telling stories. "Written histories are often biased," Sawyer acknowledges, "but the material record that has been left in the ground by our ancestors reveals the truth. Eventually we hope to learn how these people lived, how they died, how they resisted their captors. Their voices are in the things we find here."

As a Bingham, I, too, need to hear what those voices have to say.

When these problems interfere with everyday life, it could be Alzheimer's disease.

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When you or someone you care for has gradually increasing memory problems, it may not be normal aging. It could be Alzheimer's disease, an incurable, progressive illness.

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(donepezil HCl)
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ARICEPT® (donepezil HCl) 5-MG AND 10-MG TABLETS

MEDICINE TO REMEMBER™

ARICEPT® (Donepezil Hydrochloride Tablets)

Brief Summary—see package insert for full prescribing information. **INDICATIONS AND USAGE** ARICEPT® is indicated for the treatment of mild to moderate dementia of the Alzheimer's type. **CONTRAINDICATIONS** ARICEPT® is contraindicated in patients with known hypersensitivity to donepezil hydrochloride or to piperidine derivatives. **WARNINGS** ***Anesthesia:*** ARICEPT®, as a cholinesterase inhibitor, is likely to exaggerate succinylcholine-type muscle relaxation during anesthesia. ***Cardiovascular Conditions:*** Because of their pharmacological action, cholinesterase inhibitors may have vagotonic effects on the sinoatrial and atrioventricular nodes. This effect may manifest as bradycardia or heart attack in patients both with or without known underlying cardiac conduction abnormalities. Syncopal episodes have been reported in association with the use of ARICEPT®. ***Gastrointestinal Conditions:*** Through their primary action, cholinesterase inhibitors may be expected to increase gastric acid secretion due to increased cholinergic activity. Therefore, patients should be monitored closely for symptoms of active or occult gastrointestinal bleeding, especially those at increased risk for developing ulcers, e.g., those with a history of ulcer disease or those receiving concurrent nonsteroidal anti-inflammatory drugs (NSAIDS). Clinical studies of ARICEPT® have shown no increase, relative to placebo, in the incidence of either peptic ulcer disease or gastrointestinal bleeding. ARICEPT®, as a predictable consequence of its pharmacological properties, has been shown to produce diarrhea, nausea and vomiting. These effects, when they occur, appear more frequently with the 10 mg/day dose than with the 5 mg/day dose. In most cases, these effects have been mild and transient, sometimes lasting one to three weeks, and have resolved during continued use of ARICEPT®. ***Genitourinary:*** Although not observed in clinical trials of ARICEPT®, cholinomimetics may cause bladder outflow obstruction. ***Neurological Conditions:*** Seizures: Cholinomimetics are believed to have some potential to cause generalized convulsions. However, seizure activity also may be a manifestation of Alzheimer's Disease. ***Pulmonary Conditions:*** Because of their cholinomimetic actions, cholinesterase inhibitors should be prescribed with care to patients with a history of asthma or obstructive pulmonary disease. **PRECAUTIONS Drug-Drug Interactions** ***Drugs Highly Bound to Plasma Proteins:*** Drug displacement studies have been performed *in vitro* between this highly bound drug (96%) and other drugs such as furosemide, digoxin, and warfarin. ARICEPT® at concentrations of 0.3-10 µg/mL did not affect the binding of furosemide (5 µg/mL), digoxin (2 ng/mL), and warfarin (3 µg/mL) to human albumin. Similarly, the binding of ARICEPT® to human albumin was not affected by furosemide, digoxin, and warfarin. ***Effect of ARICEPT® on the Metabolism of Other Drugs:*** No *in vivo* clinical trials have investigated the effect of ARICEPT® on the clearance of drugs metabolized by CYP 3A4 (e.g. cisapride, terfenadine) or by CYP 2D6 (e.g. imipramine). However, *in vitro* studies show a low rate of binding to these enzymes (mean Ki about 50-130 µM), that, given the therapeutic plasma concentrations of donepezil (164 nM), indicates little likelihood of interference. Whether ARICEPT® has any potential for enzyme induction is not known. ***Effect of Other Drugs on the Metabolism of ARICEPT®:*** Ketoconazole and quinidine, inhibitors of CYP450, 3A4 and 2D6, respectively, inhibit donepezil metabolism *in vitro*. Whether there is a clinical effect of these inhibitors is not known. Inducers of CYP 2D6 and CYP 3A4 (e.g., phenytoin, carbamazepine, dexamethasone, rifampin, and phenobarbital) could increase the rate of elimination of ARICEPT®. ***Use with Anticholinergics:*** Because of their mechanism of action, cholinesterase inhibitors have the potential to interfere with the activity of anticholinergic medications. ***Use with Cholinomimetics and Other Cholinesterase Inhibitors:*** A synergistic effect may be expected when cholinesterase inhibitors are given concurrently with succinylcholine, similar neuromuscular blocking agents or cholinergic agonists such as bethanechol. **Carcinogenesis, Mutagenesis, Impairment of Fertility** Carcinogenicity studies of donepezil have not been completed. Donepezil was not mutagenic in the Ames reverse mutation assay in bacteria. In the chromosome aberration test in cultures of Chinese hamster lung (CHL) cells, some clastogenic effects were observed. Donepezil was not clastogenic in the *in vivo* mouse micronucleus test. Donepezil had no effect on fertility in rats at doses up to 10 mg/kg/day (approximately 8 times the maximum recommended human dose on a mg/m^2 basis). **Pregnancy** ***Pregnancy Category C:*** Teratology studies conducted in pregnant rats at doses up to 16 mg/kg/day (approximately 13 times the maximum recommended human dose on a mg/m^2 basis) and in pregnant rabbits at doses up to 10 mg/kg/day (approximately 16 times the maximum recommended human dose on a mg/m^2 basis) did not disclose any evidence for a teratogenic potential of donepezil. However, in a study in which pregnant rats were given up to 10 mg/kg/day (approximately 8 times the maximum recommended human dose on a mg/m^2 basis) from day 17 of gestation through day 20 postpartum, there was a slight increase in still births and a slight decrease in pup survival through day 4 postpartum at this dose; the next lower dose tested was 3 mg/kg/day. There are no adequate or well-controlled studies in pregnant women. ARICEPT® should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. **Nursing Mothers** It is not known whether donepezil is excreted in human breast milk. ARICEPT® has no indication for use in nursing mothers. **Pediatric Use** There are no adequate and well-controlled trials to document the safety and efficacy of ARICEPT® in any illness occurring in children. **ADVERSE REACTIONS Adverse Events Leading to Discontinuation** The rates of discontinuation from controlled clinical trials of ARICEPT® due to adverse events for the ARICEPT® 5 mg/day treatment groups were comparable to those of placebo-treatment groups at approximately 5%. The rate of discontinuation of patients who received 7-day escalations from 5 mg/day to 10 mg/day, was higher at 13%. The most common adverse events leading to discontinuation, defined as those occurring in at least 2% of patients and at twice the incidence seen in placebo patients, are shown in Table 1.

Table 1. Most Frequent Adverse Events Leading to Withdrawal from Controlled Clinical Trials by Dose Group

Dose Group	Placebo	5 mg/day ARICEPT®	10 mg/day ARICEPT®
Patients Randomized Event/%Discontinuing	355	350	315
Nausea	1%	1%	3%
Diarrhea	0%	<1%	3%
Vomiting	<1%	<1%	2%

Most Frequent Adverse Clinical Events Seen in Association with the Use of ARICEPT® The most common adverse events, defined as those occurring at a frequency of at least 5% in patients receiving 10 mg/day and twice the placebo rate, are largely predicted by ARICEPT®'s cholinomimetic effects. These include nausea, diarrhea, insomnia, vomiting, muscle cramp, fatigue and anorexia. These adverse events were often of mild intensity and transient, resolving during continued ARICEPT® treatment without the need for dose modification. There is evidence to suggest that the frequency of these common adverse events may be affected by the rate of titration. An open-label study was conducted with 269 patients who received placebo in the 15- and 30-week studies. These patients were titrated to a dose of 10 mg/day over a 6-week period. The rates of common adverse events were lower than those seen in patients titrated to 10 mg/day over one week in the controlled clinical trials and were comparable to those seen in patients on 5 mg/day. See Table 2 for a comparison of the most common adverse events following one and six week titration regimens

Table 2. Comparison of Rates of Adverse Events in Patients Titrated to 10 mg/day Over 1 and 6 Weeks

Adverse Event	Placebo (n=315)	No titration 5 mg/day (n=311)	One-week titration 10 mg/day (n=315)	Six-week titration 10 mg/day (n=269)
Nausea	6%	5%	19%	6%
Diarrhea	5%	8%	15%	9%
Insomnia	6%	6%	14%	6%
Fatigue	3%	4%	8%	3%
Vomiting	3%	3%	8%	5%
Muscle cramps	2%	6%	8%	3%
Anorexia	2%	3%	7%	3%

Adverse Events Reported in Controlled Trials The events cited reflect experience gained under closely monitored conditions of clinical trials in a highly selected patient population. In actual clinical practice or in other clinical trials, these frequency estimates may not apply, as the conditions of use, reporting behavior, and the kinds of patients treated may differ. Table 3 lists treatment emergent signs and symptoms that were reported in at least 2% of patients in placebo-controlled trials who received ARICEPT® and for which the rate of occurrence was greater for ARICEPT® assigned than placebo assigned patients. In general, adverse events occurred more frequently in female patients and with advancing age.

Table 3. Adverse Events Reported in Controlled Clinical Trials in at Least 2% of Patients Receiving ARICEPT® (donepezil HCl) and at a Higher Frequency than Placebo-treated Patients

Body System/Adverse Event	Placebo (n=355)	ARICEPT® (n=747)
Percent of Patients with any Adverse Event	**72**	**74**
Body as a Whole		
Headache	9	10
Pain, various locations	8	9
Accident	6	7
Fatigue	3	5
Cardiovascular System		
Syncope	1	2
Digestive System		
Nausea	6	11
Diarrhea	5	10
Vomiting	3	5
Anorexia	2	4
Hemic and Lymphatic System		
Ecchymosis	3	4
Metabolic and Nutritional Systems		
Weight Decrease	1	3
Musculoskeletal System		
Muscle Cramps	2	6
Arthritis	1	2
Nervous System		
Insomnia	6	9
Dizziness	6	8
Depression	<1	3
Abnormal Dreams	0	3
Somnolence	<1	2
Urogenital System		
Frequent Urination	1	2

Other Adverse Events Observed During Clinical Trials ARICEPT® has been administered to over 1700 individuals during clinical trials worldwide. Approximately 1200 of these patients have been treated for at least 3 months and more than 1000 patients have been treated for at least 6 months. Controlled and uncontrolled trials in the United States included approximately 900 patients. In regards to the highest dose of 10 mg/day, this population includes 650 patients treated for 3 months, 475 patients treated for 6 months and 116 patients treated for over 1 year. The range of patient exposure is from 1 to 1214 days. Treatment emergent signs and symptoms that occurred during 3 controlled clinical trials and two open-label trials in the United States were recorded as adverse events by the clinical investigators using terminology of their own choosing. To provide an overall estimate of the proportion of individuals having similar types of events, the events were grouped into a smaller number of standardized categories using a modified COSTART dictionary and event frequencies were calculated across all studies. These categories are used in the listing below. The frequencies represent the proportion of 900 patients from these trials who experienced that event while receiving ARICEPT®. All adverse events occurring at least twice are included, except for those already listed in Tables 2 or 3, COSTART terms too general to be informative, or events less likely to be drug caused. Events are classified by body system and listed using the following definitions: *frequent adverse events*—those occurring in at least 1/100 patients; *infrequent adverse events*—those occurring in 1/100 to 1/1000 patients. These adverse events are not necessarily related to ARICEPT® treatment and in most cases were observed at a similar frequency in placebo-treated patients in the controlled studies. No important additional adverse events were seen in studies conducted outside the United States. **Body as a Whole:** *Frequent:* influenza, chest pain, toothache; *Infrequent:* fever, edema face, periorbital edema, hernia hiatal, abscess, cellulitis, chills, generalized coldness, head fullness, listlessness. **Cardiovascular System:** *Frequent:* hypertension, vasodilation, atrial fibrillation, hot flashes, hypotension; *Infrequent:* angina pectoris, postural hypotension, myocardial infarction, AV block (first degree), congestive heart failure, arteritis, bradycardia, peripheral vascular disease, supraventricular tachycardia, deep vein thrombosis. **Digestive System:** *Frequent:* fecal incontinence, gastrointestinal bleeding, bloating, epigastric pain; *Infrequent:* eructation, gingivitis, increased appetite, flatulence, periodontal abscess, cholelithiasis, diverticulitis, drooling, dry mouth, fever sore, gastritis, irritable colon, tongue edema, epigastric distress, gastroenteritis, increased transaminases, hemorrhoids, ileus, increased thirst, jaundice, melena, polydipsia, duodenal ulcer, stomach ulcer. **Endocrine System:** *Infrequent:* diabetes mellitus, goiter. **Hemic and Lymphatic System:** *Infrequent:* anemia, thrombocythemia, thrombocytopenia, eosinophilia, erythrocytopenia. **Metabolic and Nutritional Disorders:** *Frequent:* dehydration; *Infrequent:* gout, hypokalemia, increased creatine kinase, hyperglycemia, weight increase, increased lactate dehydrogenase. **Musculoskeletal System:** *Frequent:* bone fracture; *Infrequent:* muscle weakness, muscle fasciculation. **Nervous System:** *Frequent:* delusions, tremor, irritability, paresthesia, aggression, vertigo, ataxia, increased libido, restlessness, abnormal crying, nervousness, aphasia; *Infrequent:* cerebrovascular accident, intracranial hemorrhage, transient ischemic attack, emotional lability, neuralgia, coldness (localized), muscle spasm, dysphoria, gait abnormality, hypertonia, hypokinesia, neurodermatitis, numbness (localized), paranoia, dysarthria, dysphasia, hostility, decreased libido, melancholia, emotional withdrawal, nystagmus, pacing. **Respiratory System:** *Frequent:* dyspnea, sore throat, bronchitis; *Infrequent:* epistaxis, post nasal drip, pneumonia, hyperventilation, pulmonary congestion, wheezing, hypoxia, pharyngitis, pleurisy, pulmonary collapse, sleep apnea, snoring. **Skin and Appendages:** *Frequent:* pruritus, diaphoresis, urticaria; *Infrequent:* dermatitis, erythema, skin discoloration, hyperkeratosis, alopecia, fungal dermatitis, herpes zoster, hirsutism, skin striae, night sweats, skin ulcer. **Special Senses:** *Frequent:* cataract, eye irritation, vision blurred; *Infrequent:* dry eyes, glaucoma, earache, tinnitus, blepharitis, decreased hearing, retinal hemorrhage, otitis externa, otitis media, bad taste, conjunctival hemorrhage, ear buzzing, motion sickness, spots before eyes. **Urogenital System:** *Frequent:* urinary incontinence, nocturia; *Infrequent:* dysuria, hematuria, urinary urgency, metrorrhagia, cystitis, enuresis, prostate hypertrophy, pyelonephritis, inability to empty bladder, breast fibroadenosis, fibrocystic breast, mastitis, pyuria, renal failure, vaginitis. **Postintroduction Reports** Voluntary reports of adverse events temporally associated with ARICEPT® that have been received since market introduction that are not listed above, and that there is inadequate data to determine the causal relationship with the drug include the following: abdominal pain, agitation, cholecystitis, confusion, convulsions, hallucinations, heart block (all types), hemolytic anemia, hepatitis, hyponatremia, pancreatitis, and rash. **OVERDOSAGE Because strategies for the management of overdose are continually evolving, it is advisable to contact a Poison Control Center to determine the latest recommendations for the management of an overdose of any drug.** As in any case of overdose, general supportive measures should be utilized. Overdosage with cholinesterase inhibitors can result in cholinergic crisis characterized by severe nausea, vomiting, salivation, sweating, bradycardia, hypotension, respiratory depression, collapse and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Tertiary anticholinergics such as atropine may be used as an antidote for ARICEPT® overdosage. Intravenous atropine sulfate titrated to effect is recommended: an initial dose of 1.0 to 2.0 mg IV with subsequent doses based upon clinical response. Atypical responses in blood pressure and heart rate have been reported with other cholinomimetics when co-administered with quaternary anticholinergics such as glycopyrrolate. It is not known whether ARICEPT® and/or its metabolites can be removed by dialysis (hemodialysis, peritoneal dialysis, or hemofiltration). Dose-related signs of toxicity in animals included reduced spontaneous movement, prone position, staggering gait, lacrimation, clonic convulsions, depressed respiration, salivation, miosis, tremors, fasciculation and lower body surface temperature. **DOSAGE AND ADMINISTRATION** The dosages of ARICEPT® shown to be effective in controlled clinical trials are 5 mg and 10 mg administered once per day. The higher dose of 10 mg did not provide a statistically significantly greater clinical benefit than 5 mg. There is a suggestion, however, based upon order of group mean scores and dose trend analyses of data from these clinical trials, that a daily dose of 10 mg of ARICEPT® might provide additional benefit for some patients. Accordingly, whether or not to employ a dose of 10 mg is a matter of prescriber and patient preference. Evidence from the controlled trials indicates that the 10 mg dose, with a one week titration, is likely to be associated with a higher incidence of cholinergic adverse events than the 5 mg dose. In open label trials using a 6 week titration, the frequency of these same adverse events was similar between the 5 mg and 10 mg dose groups. Therefore, because steady state is not achieved for 15 days and because the incidence of untoward effects may be influenced by the rate of dose escalation, treatment with a dose of 10 mg should not be contemplated until patients have been on a daily dose of 5 mg for 4 to 6 weeks. ARICEPT® should be taken in the evening, just prior to retiring, and may be taken with or without food.

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Eisai Inc.
Teaneck, NJ 07666

Pfizer U.S. Pharmaceuticals
New York, NY 10017

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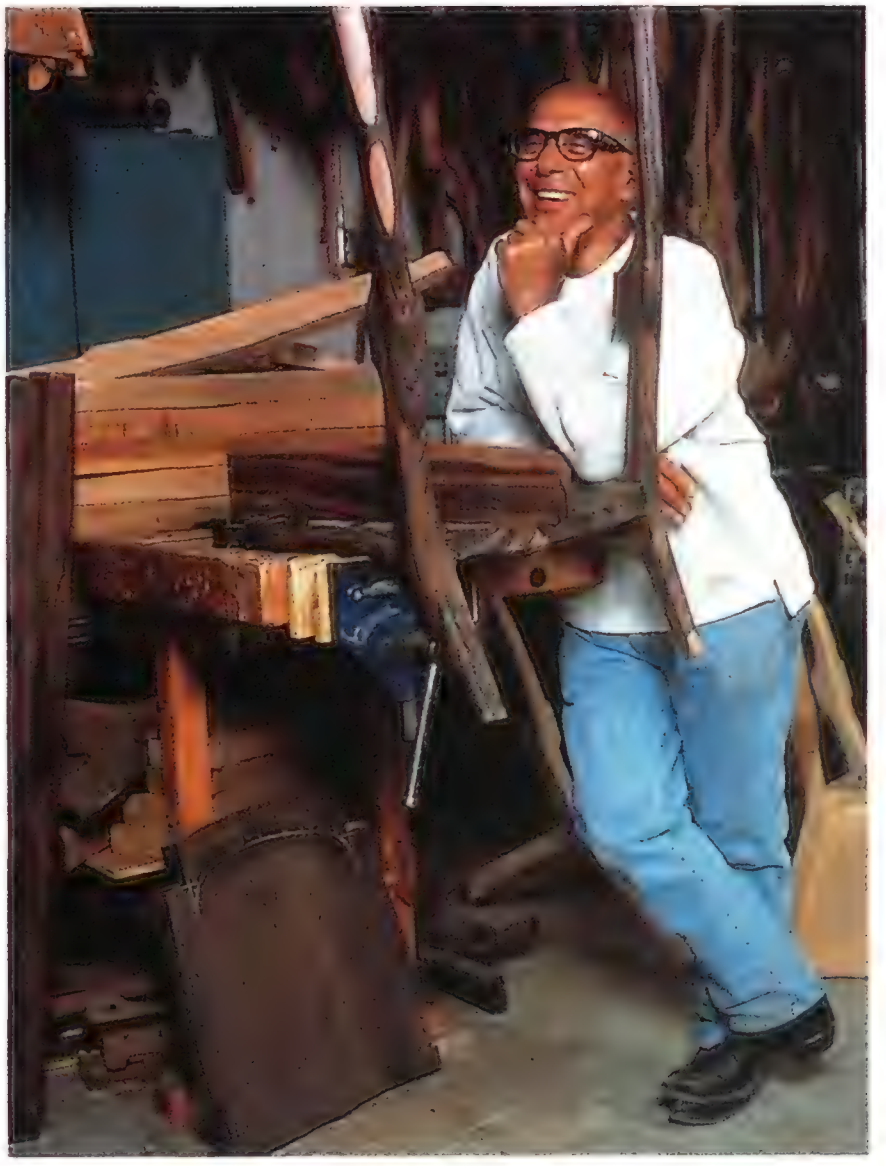
JUST LOOKING

TIME OUT

Novices at the Santa Catalina Convent, in Arequipa, Peru, take a break from their studies and prayers. Free time is scheduled for the young women because the adjustment to a solitary, cloistered life is difficult. Thirty nuns and novices live in the small convent built in 1580. The youngest novice was 15 years old, the oldest nun, 98, when Melissa Farlow photographed them for the book *Long Road South: the Pan American Highway.*



Maloof (in his studio in April) makes 60 pieces of furniture a year. His trademark rocker sold for $140,000 at a recent charity auction.

Best Seats in the House

AROUND THE MALL

SAM MALOOF DOESN'T LOOK LIKE THE kind of person you'd expect to see at an art opening. The 85-year-old master craftsman scrutinizes the array of his polished hardwood furniture at the Smithsonian American Art Museum through unfashionable horn-rimmed glasses that swallow his face. He has mechanic's hands: a gash on his thumb has not healed and the tips of several fingers are missing—he, after all, wields a band saw, not a paintbrush.

Yet the art community recognizes this self-taught woodworker as America's most renowned contemporary furniture craftsman, an artist one writer called "the Hemingway of hardwood." Examples of Maloof's chairs, settees and tables grace America's finest museums, including the Met in New York, Boston's Museum of Fine Arts and the Los Angeles County Museum of Art. Maloof pieces auctioned at Sotheby's and Christie's in New York fetched ten times their original price. He remains one of only a few furniture designers and craftsmen who make their living working full-time with their hands. His elegant rocking chairs with their fluid, sculptural lines now command $20,000 or more and are owned by Presidents Reagan, Carter and Clinton.

Those who can't afford a Maloof—as well as those who can—now have a rare opportunity to see 65 originals up close. The first ever retrospective of his half-century career will remain at American Art's Renwick Gallery in Washington, D.C. through January 20.

Near the entrance to the show is the sleek maple-and-leather chair Maloof made for industrial designer Henry Dreyfuss in 1952, from the commission that enabled him to quit his job as a graphic designer and turn his hand to furniture. With its pipe-cleaner-thin legs and arms, the chair seems to float in space.

The collection allows visitors to follow the evolution of Maloof's style: right-angled joints in his earlier rocking

JONATHAN POLLOCK/SMITHSONIAN AMERICAN ART MUSEUM RENWICK GALLERY (C)

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chairs became increasingly rounded; seats, arms and backs now flow into one another. Out of smooth expanses of wood arise clean ridges and hard lines.

Pictures simply can't convey the power of his artistry, curator Jeremy Adamson writes in the exhibition catalog. "Maloof chairs silently cry out to be touched."

As artful as the furniture is, Maloof maintains a balance between beauty and comfort. "I want people to sit on my chairs," he says. To that end, a maple armchair with a roomy sculpted seat has been put aside for visitors to try out.

On a platform sits a trio of his famous rocking chairs, bearing tapered ski-length runners so finely turned that a nudge sends them gently rocking for more than four minutes. One rocker in the exhibition remains unfinished, its rough pieces clearly revealing Maloof's signature flat spindles, which mimic the curvature of the spine.

The son of Lebanese immigrants, Maloof served in the Army during World War II. After the war, he discovered his woodworking talent when he made a suite of furniture from scavenged plywood to fill the modest California tract house he shared with his wife and mother-in-law. Fifty years on, another home that he built room by room (a total of 22) in a lemon grove in Alta Loma, California, will soon be added to the National Register of Historic Places.

As the hands-on artist surveys the exhibition, he spots a deep-grained walnut cabinet. "This right here seems rough," he says, running a palm over the door. "Do we have any steel wool?" —*Tom Dunkel*

Using animal-skin glue, Andrew Hare repairs a 14th-century Japanese painting, a project that will take three years.

Saving Asian Art

WITH SEAWEED, GLUE AND BAMBOO

WHEN ANDREW HARE BEGAN HIS TEN-YEAR CONSERVATOR training at Kyoto's famed Usami Shokakudo Studio in 1990, he spent weeks observing masters restoring East Asian paintings before he graduated to sweeping the floor. "You're never an individual but part of a group," Hare says.

As one of only three Westerners to complete the Usami apprenticeship, Hare, 38, now brings this cooperative spirit and his uncommon expertise to the delicate process of restoring artworks at the Smithsonian's Sackler and Freer galleries, where he is the supervisory conservator of East Asian paintings. His staff includes specialists from Japan, China, France and the United States, as well as scientists who study art at microscopic levels.

"We're very fortunate to have people trained in different traditional conservation methods," says Hare, who earned degrees in chemistry and East Asian culture at Oberlin College in Ohio. "We're always learning from each other."

The expertise is due in part to the generosity of Ikuo Hirayama, the former president of the Tokyo University of Fine Arts and Music. A painter himself, he funds conservation courses and staff, and in 1991 established the "Red Cross" for Japanese art, which sent Freer works to Japan for restoration. As an apprentice, Hare had a hand in conserving those paintings.

While the Freer and Sackler hardly lack state-of-the-art technology, the most significant part of restoring East Asian works is done with brushes, beads, knives, aged paste, bamboo spatulas, seaweed gelatin and lots of patience. A 14th-century Buddhist silk wall hanging with a royal blue background lies facedown on a worktable, where an expert using tweezers will take an entire day to remove one deteriorated square inch of the painting. Bugs, smoke, mold, humidity, light and polluted air are enemies of the fragile silk and paper used for East Asian paintings, which are generally more susceptible to holes and creases than Western works rendered on heavy canvases and covered by layers of varnish. After the meticulous removal of damaged sections, restorers use seaweed gelatin to inset pieces of silk cut precisely to fit the area. Because the new, stronger fabric can pull apart the delicate original, the silk inset has been artificially aged and weakened by radiation.

In keeping with Asian traditions and conservation techniques, the museum staff carefully rolls up the restored ancient scrolls and stores them in boxes made of paulownia, a porous wood that guards against temperature changes. The boxes are often antiques, lacquered, inscribed and beribboned. "Just opening the box is an aesthetic experience," Hare says. "The box is beautiful, has a history, you can read the inscription. It's an education before you even see the painting." —*Mary O'Neill*

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Movie Miniatures

CUTTING BAD GUYS DOWN TO SIZE

PEEVED BY PEOPLE TALKING, CRUNCHING POPCORN AND slurping drinks in movie theaters? While some patrons might respond by just staying home and watching videos, kinetic sculptor David Beck decided to have a little fun with the *inconsiderati*.

About a decade ago, the San Francisco artist created *Movie Palace*, an elaborate working miniature theater made of linden, walnut and boxwood marquetry, as well as mussel and ostrich-egg shells. Acquired last year by the Smithsonian American Art Museum, the opulent movie house—2 by 3 feet and 7 feet tall—is on display at the Renwick Gallery. Its blue and gold-leaf exterior is a riot of cupolas, archways and reliefs depicting movie genres such as westerns and epics. Inside are painstakingly carved moviegoers of the kind you love to hate, complete with their spilled snacks and syrupy sodas.

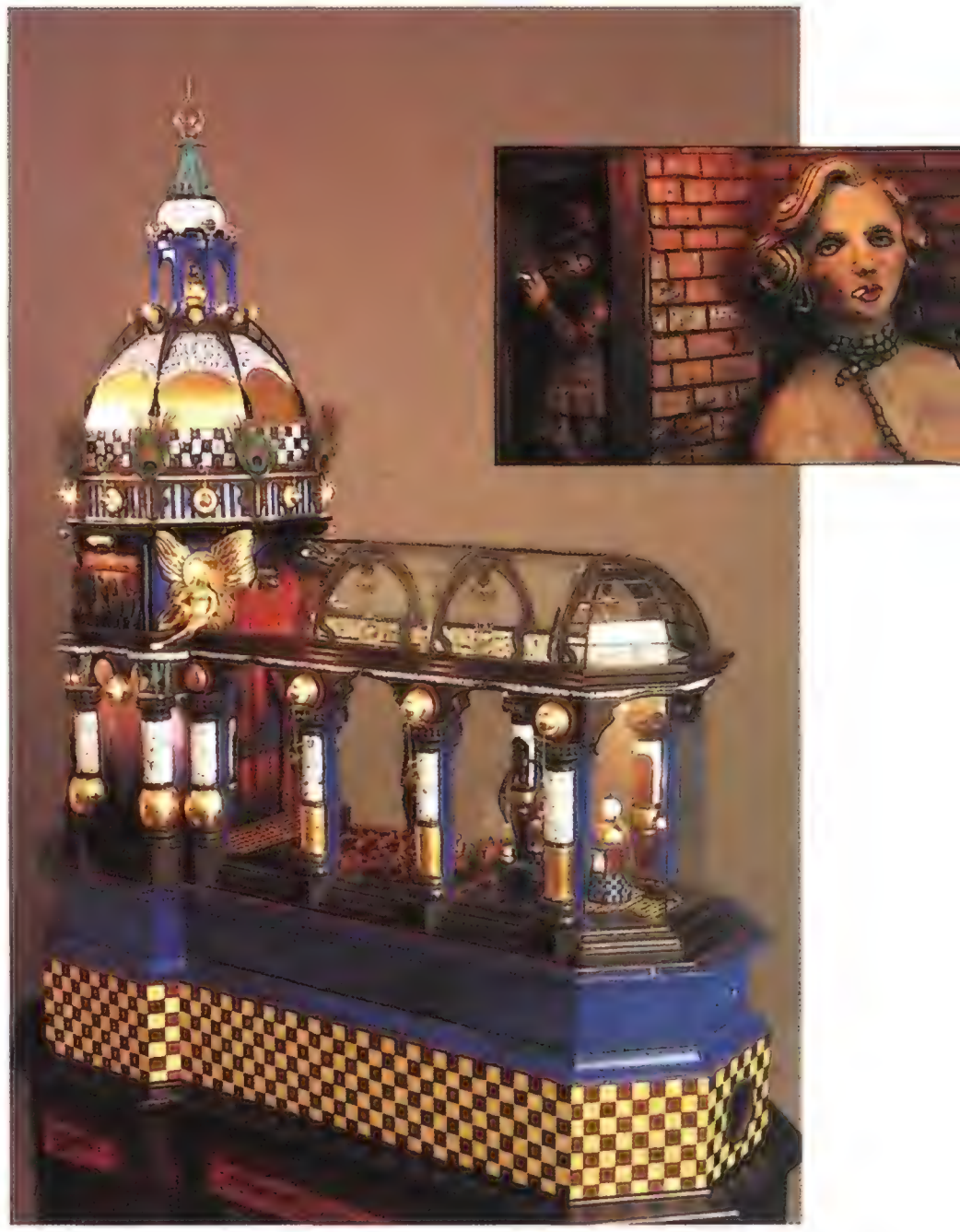
Flick a switch and two hapless patrons crane their necks trying to see around a tall boor stuffing himself with popcorn. A few rows back, a handsome, dark-haired man, arms full of candy and treats, pops up and down looking for his girlfriend, a buxom blonde in a red dress waving back at him from her second-row seat. Another couple is necking while a man seated behind them leers.

On the screen, King Kong clings to the Empire State Building (and Fay Wray) while swatting at the planes buzzing him. Beck carved the scene in relief and employed gears, mirrors and strobe lights to animate it. He uses tiny mechanisms similar to those in music boxes to move the *Movie Palace* figurines. The technically curious can check out the intricate engineering by peering through a little window underneath the theater. (Demonstrations of the sculpture in motion are conducted by docents.)

Beck, 48, has created about a dozen major kinetic projects over his 25-year career, including a baroque opera house and a band shell with an animatronic orchestra. When he took American Art Museum director Elizabeth Broun to the Musée Mécanique in San Francisco, she recalls, "We spent hours pumping quarters into the old Wurlitzer, the mechanical baseball game and Susie the Can-Can."

Beck was studying painting and sculpture at Carnegie-Mellon University in Pittsburgh when he began adding small objects and figures to his canvases. By the mid-1970s, he was building dioramas and soon after he added movement to them.

The artist himself once received a scolding in a theater: "My hair tends to stick up, and the lady behind said, 'Hey. Your hair is blocking my view,' and handed me a hairbrush. I told her I never brush. But I did try to squinch my hair down." —*Bruce Hathaway*



Childhood visits to drive-in theaters in Indiana inspired Beck's *Movie Palace*. Relief (inset) depicts film noir.

DAVID BECK (2)

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Albina Felski's *The Circus* (above), which depicts spectators watching clowns, animal acts and trapeze artists in death-defying feats, is part of *Contemporary Folk Art: Treasures from the Smithsonian American Art Museum*. One of eight exhibitions from the museum touring the country through 2002, *Contemporary Folk Art* is on view at the Cummer Museum of Art & Gardens in Jacksonville, Florida, until January 20. —*Lucinda Moore*

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SMITHSONIAN AMERICAN ART MUSEUM, SI

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USES OF ZOCOR

ZOCOR is a prescription drug that is indicated as an addition to diet for many patients with high cholesterol when diet and exercise are inadequate. For patients with coronary heart disease (CHD) and high cholesterol, ZOCOR is indicated as an addition to diet to reduce the risk of death by reducing coronary death; to reduce the risk of heart attack; to reduce the risk for undergoing cardiac procedures (coronary artery bypass grafting and percutaneous transluminal coronary angioplasty); and to reduce the risk of stroke or transient ischemic attack (TIA)

WHEN ZOCOR SHOULD NOT BE USED

Some people should not take ZOCOR. Discuss this with your doctor.

ZOCOR should not be used by patients who are allergic to any of its ingredients. In addition to the active ingredient simvastatin, each tablet contains the following inactive ingredients: cellulose, lactose, magnesium stearate, iron oxides, talc, titanium dioxide, and starch. Butylated hydroxyanisole is added as a preservative.

Patients with liver problems: ZOCOR should not be used by patients with active liver disease or repeated blood test results indicating possible liver problems. (See WARNINGS.)

Women who are or may become pregnant: Pregnant women should not take ZOCOR because it may harm the fetus. **Women of childbearing age should not take ZOCOR unless it is highly unlikely that they will become pregnant.** If a woman does become pregnant while on ZOCOR, she should stop taking the drug and talk to her doctor at once.

Women who are breast-feeding should not take ZOCOR.

WARNINGS

Muscle: Tell your doctor right away if you experience any unexplained muscle pain, tenderness, or weakness at any time during treatment with ZOCOR so your doctor can decide if ZOCOR should be stopped. Some patients may have muscle pain or weakness while taking ZOCOR. Rarely, this can include muscle breakdown resulting in kidney damage. The risk of muscle breakdown is greater in patients taking certain other drugs along with ZOCOR, such as the lipid-lowering drug Lopid (gemfibrozil), and other fibrates; lipid-lowering doses of niacin (nicotinic acid); Sandimmune (cyclosporine); itraconazole, ketoconazole, and other azole antifungal drugs; the antibiotics erythromycin and clarithromycin; HIV protease inhibitors; the antidepressant nefazodone; and the calcium channel blocker verapamil. Interruption of therapy with ZOCOR should be considered if you are going to take an azole antifungal medication, such as itraconazole, or macrolide antibiotics, such as erythromycin. Avoid drinking large quantities of grapefruit juice (more than one quart daily) while on ZOCOR. The risk of muscle breakdown is greater in patients with kidney problems or diabetes.

Because there are risks in combining therapy with ZOCOR with the products listed above, your doctor should carefully weigh the potential benefits and risks. He or she should also carefully monitor patients for any muscle pain, tenderness, or weakness, particularly during the initial months of therapy and if the dose of either drug is increased. Your doctor also may monitor the level of certain muscle enzymes in your body, but there is no assurance that such monitoring will prevent the occurrence of severe muscle disease.

If you have conditions that can increase your risk of muscle breakdown, which in turn can cause kidney damage, your doctor should temporarily withhold or stop ZOCOR. Also, since there are no known adverse consequences of briefly stopping therapy with ZOCOR, treatment should be stopped a few days before elective major surgery and when any major acute medical or surgical condition occurs. Discuss this with your doctor, who can explain these conditions to you.

Liver: About 1% of patients who took ZOCOR in clinical trials developed elevated levels of some liver enzymes. Patients who had these increases usually had no symptoms. Elevated liver enzymes usually returned to normal levels when therapy with ZOCOR was stopped.

In the ZOCOR Survival Study, the number of patients with more than one liver enzyme level elevation to greater than 3 times the normal upper limit was no different between the ZOCOR and placebo groups. Only 8 patients on ZOCOR and 5 on placebo discontinued therapy due to elevated liver enzyme levels. Patients were started on 20 mg of ZOCOR, and one third had their dose raised to 40 mg.

Your doctor should perform routine blood tests to check these enzymes before you start treatment with ZOCOR and periodically thereafter (for example, semiannually) for your first year of treatment or until 1 year after your last elevation in dose. Patients titrated to the 80-mg dose should receive an additional test at 3 months. If your enzyme levels increase, your doctor should order more frequent tests. If your liver enzyme levels remain unusually high, your doctor should discontinue your medication.

Tell your doctor about any liver disease you may have had in the past and about how much alcohol you consume. ZOCOR should be used with caution in patients who consume large amounts of alcohol.

PRECAUTIONS

Before starting treatment with ZOCOR, try to lower your cholesterol by other methods such as diet, exercise, and weight loss. Ask your doctor about how best to do this. Any other medical problems that can cause high cholesterol should also be treated

Drug Interactions: Because of possible serious drug interactions, it is important to tell your doctor what other drugs you are taking, including those obtained without a prescription.

ZOCOR® (simvastatin) can interact with cyclosporine (Sandimmune), itraconazole, ketoconazole, gemfibrozil, niacin, erythromycin, clarithromycin, HIV protease inhibitors, nefazodone, and verapamil

To avoid possible serious side effects, avoid drinking large quantities of grapefruit juice (more than one quart daily) while on ZOCOR. (See WARNINGS, Muscle.)

Some patients taking lipid-lowering agents similar to ZOCOR and coumarin anticoagulants (a type of blood thinner) have experienced bleeding and/or increased blood clotting time. Patients taking these medicines should have their blood tested before starting therapy with ZOCOR and should continue to be monitored.

Central Nervous System Toxicity; Cancer, Mutations, Impairment of Fertility: Like most prescription drugs, ZOCOR was required to be tested on animals before it was marketed for human use Often these tests were designed to achieve higher drug concentrations than humans achieve at recommended dosing. In some tests, the animals had damage to the nerves in the central nervous system. In studies of mice with high doses of ZOCOR, the likelihood of certain types of cancerous tumors increased. No evidence of mutations of or damage to genetic material has been seen. In one study with ZOCOR, there was decreased fertility in male rats

Pregnancy: Pregnant women should not take ZOCOR because it may harm the fetus

Safety in pregnancy has not been established. In studies with lipid-lowering agents similar to ZOCOR, there have been rare reports of birth defects of the skeleton and digestive system. Therefore, women of childbearing age should not take ZOCOR unless it is highly unlikely they will become pregnant. If a woman does become pregnant while taking ZOCOR, she should stop taking the drug and talk to her doctor at once. The active ingredient of ZOCOR did not cause birth defects in rats at 3 times the human dose or in rabbits at 3 times the human dose.

Nursing Mothers: Drugs taken by nursing mothers may be present in their breast milk. Because of the potential for serious adverse reactions in nursing infants, a woman taking ZOCOR should not breast-feed. (See WHEN ZOCOR SHOULD NOT BE USED.)

Pediatric Use: ZOCOR is not recommended for children or patients under 20 years of age

Geriatric Use: Higher blood levels of active drug were seen in elderly patients (70-78 years of age) compared with younger patients (18-30 years of age) in one study. In other studies, the cholesterol-lowering effects of ZOCOR were at least as great in elderly patients as in younger patients, and there were no overall differences in safety between elderly and younger patients over the 20-80 mg/day dosage range.

SIDE EFFECTS

Most patients tolerate treatment with ZOCOR well; however, like all prescription drugs, ZOCOR can cause side effects, and some of them can be serious. Side effects that do occur are usually mild and short-lived. Only your doctor can weigh the risks versus the benefits of any prescription drug. In clinical studies with ZOCOR, less than 1.5% of patients dropped out of the studies because of side effects In a large, long-term study, patients taking ZOCOR experienced similar side effects to those patients taking placebo (sugar pills). Some of the side effects that have been reported with ZOCOR or related drugs are listed below. This list is not complete. Be sure to ask your doctor about side effects before taking ZOCOR and to discuss any side effects that occur.

Digestive System: Constipation, diarrhea, upset stomach, gas, heartburn, stomach pain/cramps anorexia, loss of appetite, nausea, inflammation of the pancreas, hepatitis, jaundice, fatty changes in the liver, and, rarely, severe liver damage and failure, cirrhosis, and liver cancer.

Muscle, Skeletal: Muscle cramps, aches, pain, and weakness; joint pain; muscle breakdown

Nervous System: Dizziness, headache, insomnia, tingling, memory loss, damage to nerves causing weakness and/or loss of sensation and/or abnormal sensations, anxiety, depression, tremor, loss of balance, psychic disturbances

Skin: Rash, itching, hair loss, dryness, nodules, discoloration

Eye/Senses: Blurred vision, altered taste sensation, progression of cataracts, eye muscle weakness

Hypersensitivity (Allergic) Reactions: On rare occasions, a wide variety of symptoms have been reported to occur either alone or together in groups (referred to as a syndrome) that appeared to be based on allergic-type reactions, which may rarely be fatal. These have included one or more of the following: a severe generalized reaction that may include shortness of breath, wheezing, digestive symptoms, and low blood pressure and even shock; an allergic reaction with swelling of the face, lips, tongue and/or throat with difficulty swallowing or breathing; symptoms mimicking lupus (a disorder in which a person's immune system may attack parts of his or her own body); severe muscle and blood vessel inflammation, sometimes including rash; bruises; various disorders of blood cells (that could result in anemia, infection, or blood clotting problems) or abnormal blood tests; inflamed or painful joints; hives; fatigue and weakness; sensitivity to sunlight; fever, chills; flushing; difficulty breathing; and severe skin disorders that vary from rash to a serious burn-like shedding of skin all over the body, including mucous membranes such as the lining of the mouth.

Other: Loss of sexual desire, breast enlargement, impotence.

Laboratory Tests: Liver function test abnormalities including elevated alkaline phosphatase and bilirubin; thyroid function abnormalities

NOTE: This summary provides important information about ZOCOR. If you would like more information, ask your doctor or pharmacist to let you read the complete prescribing information and then discuss it with them.

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Turning Point

NEW YORKERS DIDN'T MUCH

CARE FOR THE TWIN TOWERS

UNTIL A NIMBLE FRENCHMAN

NAMED PHILIPPE PETIT DANCED

ACROSS A WIRE BETWEEN THEM

BY RUDOLPH CHELMINSKI

On August 7, 1974, Petit steadied himself on a guy rope (above) and focused on the task that lay ahead. He "danced" for 45 minutes, pausing at one point (opposite) to sit down.

What turned the tide of public regard [for the World Trade Center] was not the bigness of the place but the way it could be momentarily captured by fanciful gestures on a human scale. It was the French high-wire artist Philippe Petit crossing between the towers on a tightrope in 1974. . . . —The New York Times, *September 13, 2001*

WAS IT ONLY 27 YEARS AGO? IT SEEMS AT LEAST A lifetime, or two, has passed since that August morning in 1974 when Philippe Petit, a slim, young Frenchman, upstaged Richard Nixon by performing one of the few acts more sensational—in those faraway times—than resigning the Presidency of the United States.

A week before his 26th birthday, the nimble Petit clandestinely strung a cable between the not-yet-completed twin towers, already dominating lower Manhattan's skyline, and for the better part of an hour walked back and forth over the void, demonstrating his astonishing obsession to 100,000 or so wide-eyed gawkers gathered so far below.

I missed that performance, but last summer, just two weeks before the 1,360-foot-tall towers would come to symbolize a ghastly new reality, I persuaded Petit to accompany me to the top and show me how he did it and, perhaps, explain why. I was driven by a long-standing curiosity. Ever since reading about his exploit in New York, I had felt a kind of familiarity with this remarkable fellow. Years before, I had watched him at close range and much lower altitude, in another city on the other side of the pond.

In the 1960s, the Montparnasse area of Paris was animated by a colorful fauna of celebrities, eccentrics and artistic characters. On any given day, you might run into Giacometti walking bent forward like one of his skinny statues, Raymond Duncan (Isadora's brother) in his goofy sandals and Roman toga, or Jean-Paul Sartre morosely seeking the decline of capitalism in the Communist daily, *L'Humanité*. And after nightfall, if you hung around long enough, you were almost certain to see Philippe Petit.

When he might appear was anyone's guess, but his hangouts were pretty well known: the corner of rue de Buci and Boulevard St. Germain; the sidewalk outside Les Deux Magots, or directly under the terrace windows of La Coupole. Silent and mysterious, this skinny, pasty-faced kid dressed in black would materialize unannounced on his unicycle, a shock of pale blond hair escaping from under a battered top hat. He would draw a circle of white chalk on the sidewalk, string a rope between two trees, hop up onto it and, impassive and mute as a carp, go into an improvised show that combined mime, juggling, prestidigitation and the precarious balancing act of loose-rope walking. After an hour or so he would pass the hat and, as wordlessly as he had arrived, disappear into the night.

Then, on a drizzly morning in June 1971, the kid in black suddenly showed up dancing on a barely perceptible wire between the massive towers of Notre Dame Cathedral. For nearly three hours, he walked back and forth, mugged, saluted and juggled Indian clubs while angry gendarmes waited for him to come down. When he finally did, they arrested him for disturbing the peace.

Disturbing the peace was a good part of what it was all about, of course, because Petit was out to prove something. Notre Dame was his first great coup, the sensational stunt that was to become his trademark. It was also his first declaration of status: he was not a mere street entertainer but a performer, an artiste. Ever since that June morning, he has dedicated himself to demonstrating his passionate belief that the high wire—his approach to the high wire, that is—transcends the cheap hype of circus "daredevil" routines to become a creative statement of true theater, as valid as ballet or modern dance.

Getting that point across has never been easy. After gratifying Petit with a few front-page pictures, the French establishment gave a Gallic shrug, dismissed him as a youth-

Long before he became a celebrity, Petit (juggling in front of a Left Bank café) "busked" on Paris street corners for loose change.

PP. 48-50 JEAN LOUIS BLONDEAU (3)

As part of a celebration of Frankfurt's 1,200 years of history, in 1994, Petit impersonated Goethe casting a new poem to the winds.

ful crank and returned to more serious matters—like having lunch and talking politics. There was a very interesting story to be told about this young loner who had learned the art of the funambule (literally, "rope walker") all by himself as a teenager, but the Parisian press ignored it. Within a couple of days, his Notre Dame stunt was largely forgotten.

Stung, Petit resolved to take his art elsewhere and began a long vagabondage around the world, returning to Paris for brief spells before setting off again. Traveling as light as a medieval minstrel and living hand to mouth, he carried his mute personage from city to city, juggling for his supper. None of his onlookers could know that back in his tiny Parisian studio—a rented broom closet he had somehow converted into a dwelling—he had a folder marked "projects."

Two years after the Notre Dame caper, the skinny figure in black appeared with his balancing pole between the gigantic northern pylons of the Sydney Harbour Bridge in Australia. Petit had strung his cable there just as furtively as he had done at Notre Dame, but this time the police reacted with brainless if predictable fury, attempting to force him down by cutting one of his cavalettis, the lateral guy ropes that hold a sky walker's cable steady. Flung a foot up in the air when the cavaletti sprang free, Petit managed to land square on the cable and keep his balance. He came in and was manacled, led to court and found guilty of the usual crimes. The owner of a Sydney circus offered to pay his $250 fine in return for a tightrope walk two days later over the lions' cage.

And then came the World Trade Center. Petit had been planning it ever since he was 19 when, in a dentist's waiting room, he saw an article with an artist's rendering of the gigantic towers planned for New York's financial district. ("When I see three oranges I juggle," he once said, "and when I see two towers I walk.") He ripped the article from the magazine and slipped it into his projects file.

The World Trade Center would be the ultimate test of Petit's fanatically meticulous planning. For Notre Dame and Sydney, he had copied keys to open certain locks, picked others and hacksawed his way through still others in order to sneak his heavy material up into place for the sky walk. But New York presented a much more complicated challenge. The World Trade Center buildings were fearfully higher than anything he had ever tackled, making it impossible to set up conventional cavalettis. And how to get a cable across the 140-foot gap between the south and north towers, anyway, in the face of omnipresent security crews?

There was one factor in Petit's favor: the buildings were still in the final stages of construction and trucks were regularly delivering all sorts of material to the basement docks, to be transferred to a freight elevator and brought up to the floors by workers of all descriptions. Wearing hard hats, Petit and an accomplice hauled his gear to the top of the south tower (his walking cable passed off as antenna equipment) while two other friends similarly made their way to the roof of the north tower, armed with a bow and arrow and a spool of stout fishing line. Come nightfall, they shot the arrow and line across the 140-foot gap between the towers. Petit retrieved the line, pulled it over until he was in possession of the stronger nylon cord attached to it, then tied on the heavy rope that would be

PIEL PATRICK/GAMMA

used to carry his steel walking cable over to the other side.

As Petit paid out the rope, and then the cable, gravity took over. The cable ran wild, shooting uncontrollably through his hands and snaking down the side of the giant building before coming up short with a titanic *thwonk!* at the steel beam to which Petit had anchored it. On the north tower, holding fast to the other end of the heavy rope, his friends were pulled perilously close to the roof's edge. Gradually, the four regained control and spent the rest of the night hours pulling the cable up, double-cinching the anchor points, getting it nearly level, tensioning it to three tons with a ratchet and finally attaching a set of nearly horizontal cavalettis to the buildings. At a few minutes past 7 A.M., August 7, 1974, just as the first construction workers were arriving on the rooftop, Petit seized his balancing pole and stepped out over the void.

The conditions weren't exactly ideal. Petit had not slept for 48 hours and now he saw that the hurry-up rigging job he had carried out in the dark had resulted in a cable that zigzagged where the improvised cavalettis joined it. Sensitive to wind, temperature and any sway of the buildings, it was also alive—swooping, rolling and twisting. At slightly more than 26 feet, his balancing pole was longer and heavier—55 pounds—than any he had ever used before. Greater weight meant greater stability, but such a heavy load is hard enough to tote around on terra firma, let alone on a thin wire in midair at an insane altitude. It would require an uncommon debauch of nervous energy, but energy was the one thing Petit had plenty of.

With his eyes riveted to the edge of the far tower—wire walkers aren't supposed to look down—Petit glided his buffalo-hide slippers along the cable, feeling his way until he was halfway across. He knelt, put his weight on one knee and swung his right arm free. This was his "salute," the signature gesture of the high-wire artist. Each has his own, and each is an individual trademark creation. Arising, he continued to the north tower, hopped off the wire, double-checked the cable's anchoring points, made a few adjustments and hopped back on.

By now traffic had stopped in the environs of Wall Street, and Petit could already hear the first police and ambulance sirens as he nimbly set forth again. Off he went, humming and mumbling to himself, puffing grunts of concentration at tricky moments. Halfway across, he steadied, halted, then knelt again. And then, God in heaven, he lay down, placing his spine directly atop the cable and resting the balancing pole on his stomach. Breathless, in Zen-like calm, he lay there for a long moment, contemplating the red-eyed seabird hovering motionless above him.

Time to get up. But how do you do it, I asked Petit as we stood together on the roof of the south tower, when the only thing between you and certain death is a cable under your body and 55 extra pounds lying on your belly?

"All the weight on the right foot," he replied with a shrug. "I draw my right foot back along the cable and move the balancing bar lower down below my belt. I get a little lift from the wire, because it is moving up and down. Then I do a sit-up and rise to a standing position, with all the weight on my right foot. It takes some practice."

He got up. Unable to resist the pleasure of seeing New York at his feet, he caressed the side of the building with a glance and slowly panned his eyes all the way down to the gridlocked traffic below. Then he flowed back to the south tower. "I could hear the horns of cars below me," he recalled, relishing the memory. "I could hear the applause too. The *rumeur* [clamor] of the crowd rose up to me from 400 meters below. No other show person has ever heard a sound like that."

Now, as he glided along north to south, a clutch of police officers, rescue crews and security men hovered with arms outstretched to pull him in. But Petit hadn't finished. Inches from their grasp, he did a wire walker's turn-

around, slipping his feet 180 degrees and swinging his balancing bar around to face in the other direction. He did his elegant "torero's" walk and his "promenader's" walk; he knelt; he did another salute; he sat in casual repose, lord of his domain; he stood and balanced on one foot.

After seven crossings and 45 minutes of air dancing, it began to rain. For his finale he ran along the cable to give himself up. "Running, ah! ah!" he had written in one of his early books. "That's the laughter of the wire walker." Then he ran into the arms of waiting police.

Petit's astonishing star turn created a sensation the likes of which few New Yorkers had ever seen. Years later, the art critic Calvin Tompkins was still so impressed by what Petit had done that he wrote in the *New Yorker*: "He achieved the almost unimaginable feat of investing the World Trade Center . . . with a thrilling and terrible beauty."

Ever resourceful, Petit worked out a deal with the Manhattan district attorney. In lieu of punishment or fine, and as penance for his artistic crime, he agreed to give a free performance in Central Park. The following week he strung a 600-foot wire across Turtle Pond, from a tree on one side to Belvedere Castle on the other. And this time he nearly fell. He was wearing the same walking slippers and using the same balancing pole, but security was relaxed among the 15,000 people who had come to watch him perform, and kids began climbing and jumping on his cavalettis. The wire twitched; and suddenly he felt himself going beyond the point of return.

But he didn't go all the way down. Instinctively squirming as he dropped, he hooked a leg over the wire. Somehow, he managed to swing himself back up, get vertical and carry on with the performance. The crowd applauded warmly, assuming it was all part of the act, but Petit doesn't enjoy the memory. Falling is the wire walker's shame, he says, and due only to a lack of concentration.

In the years since his World Trade Center triumph, Petit

To honor the bicentennial of the French Revolution, in 1989, Petit walked across the Seine River to the second tier of the Eiffel Tower.

has disdainfully turned away all offers to profit from it. "I could have become a millionaire," he told me. "Everyone was after me to endorse their products, but I was not going to walk a wire dressed in a hamburger suit, and I was not going to say I succeeded because I was wearing such and such a shirt." Continuing to operate as a stubbornly independent freelance artist, he has organized and starred in more than 70 performances around the world, all without safety nets. They have included choreographed strolls across the Louisiana Superdome in New Orleans, between the towers of the Laon Cathedral in France, and a "Peace Walk" between the Jewish and Arab quarters of Jerusalem. In 1989, on the bicentennial of the French Revolution, he took center stage in Paris—legally and officially this time—by walking the 2,300-foot gap between the Trocadéro esplanade on the Right Bank, over the Seine and up to the second tier of the Eiffel Tower.

Today, at 52, Petit is somewhat heavier than in his busking days in Paris, and his hair has turned a reddish blond, but neither his energy nor overpowering self-confidence has waned in the least. He shares a pleasantly rustic farmhouse at the edge of the Catskills near Woodstock, New York, with his longtime companion, Kathy O'Donnell, daughter of a former Manhattan publishing executive. She handles the planning, producing, problem-solving and money-raising aspects of Petit's enterprises while they both think up new high-wire projects and he painstakingly prepares them. Petit supplements his income from performances with, among other things, book royalties and fees from giving lectures and workshops.

As his elaborate sketches for anchoring a cable make clear, Petit is a meticulous planner.

His preferred place of study is his New York City office. Knowing what an artiste he is, you would not expect to find him in an ordinary building, and you would be right. Petit hangs out at the Cathedral of St. John the Divine, the world's biggest Gothic cathedral, at Amsterdam Avenue and 112th Street. His office is a balustraded aerie in the cathedral's triforium, the narrow gallery high above the vast nave. Behind a locked entryway, up a suitably medieval spiral staircase and then down a stone passageway, the rare visitor to his domain comes upon a sturdy door bearing a small framed sign: Philippe Petit, Artist in Residence. Behind that door, stowed as neatly as a yacht's navigational gear, lie his treasures: thousands of feet of rope coiled just so, all manner of rigging and tensioning equipment, floor to ceiling archives, maps and models of past and future walk projects, and shelves upon shelves of technical and reference books.

It was another of his coups that got him there. In 1980 he offered to walk the length of the nave to raise funds for the cathedral's building program. He was sure he had the perfect occasion for it: Ascension Day. The cathedral's then dean, the ebullient James Parks Morton, famous for his support of the arts, was enthusiastic, but his board of trustees vetoed the idea as too dangerous. Petit sneaked a cable crosswise over the nave and did his walk anyway. Once again the police came to arrest him, but Morton spoiled their day by announcing that Petit was artist in residence and the cathedral was his workplace. And so he came to be.

Over the years, taking his title seriously, Petit reciprocated by carrying out a dozen wire walks inside and outside the cathedral. He figures that by now he has raised half a million dollars for the still uncompleted cathedral's building program, and enjoys pointing out the small stone carving of a wire walker niched in among the saints in the main portal. "It is high art," Morton says of Petit's work. "There is a documented history of wire walkers in cathedrals and churches. It's not a new idea, but his walk here was his first in an American cathedral."

Sometimes after 6 P.M., when the lights go out, the big front door slams shut and the cathedral closes down for the night, Petit is left alone in the mineral gloom of St. John with his writing, sketches, calculations, chess problems, poetry and reveries. The comparison to Quasimodo is immediate and obvious, of course, but unlike Notre Dame's famous hunchback, Petit wants nothing more than to be seen, in the ever greater, more ambitious and spectacular shows that fill his dreams. One night after he took me up to his cathedral office, he gazed longingly at a print of the Brooklyn Bridge—what a walk that could be! But there is, he assured me, plenty more in his "projects" file. A walk on Easter Island, from the famous carved heads to the volcano. Or the half-mile stretch over open water between the Sydney Harbour Bridge and the celebrated Opera House.

Even more than all these, though, there is one walk—*the* walk, the ultimate, the masterpiece—that has filled his dreams for more than a decade. It's the Grand Canyon.

RICHARD SCHULTZ; PP. 52, 53 GAMMA

Shaken by the events that demolished the scene of his triumph, Petit (at home in upstate New York) grieves for those who perished.

Prospecting in the heart of the Navajo nation by air in 1988, Petit discovered the ideal spot for crowning his career: a ruggedly beautiful landscape off the road from Flagstaff to Grand Canyon Village, where a noble mesa soars at the far end of a 1,200-foot gap from the canyon's edge. The gap is deeper than it is wide, 1,600 feet straight down to the Little Colorado River.

Petit's eyes glowed as he went through the mass of blueprints, maps, drawings and models he has produced over all the years of planning the Canyon Walk. Only one thing is missing: money. Twice now, the money people have backed out at the last minute.

But none of that seemed to matter when I spoke to Petit a few days after the September 11 catastrophe struck. He could scarcely find words for his sorrow at the loss of so many lives, among them people he knew well—elevator operators, tour guides, maintenance workers. "I feel my house has been destroyed," he said. "Very often I would take family and friends there. It was my pride as a poet and a lover of beautiful things to show as many people as possible the audacity of those impossible monoliths."

Haunted, as we all are, by the images of the towers in their final moments, Petit told me it was his hope that they would be remembered not as they appeared then but as they were on that magical August day more than a generation ago, when he danced between them on a wire and made an entire city look up in awe. "In a very small way I helped frame them with glory," he said, "and I want to remember them in their glory."

For the past 25 years, Rudolph Chelminski has lived outside Paris in Bourron-Marlotte, a village he profiled in September 2000.

RICHARD SCHULTZ

Magnificent Obsession

ARTIST ALBERTO GIACOMETTI'S SINGULAR VISION IS CELEBRATED IN A SPECIAL CENTENNIAL EXHIBITION AT NEW YORK CITY'S MUSEUM OF MODERN ART

"THE ARTIST," ALBERTO GIACOMETTI ONCE TOLD HIS BOARDing school classmates, "must portray things as he sees them, not as others show them." He was just 16, but those words would define and haunt him for the rest of his life. Born just 100 years ago on October 10, 1901, he became one of the titans of 20th-century sculpture and painting, an artist who gave Picasso advice on sculpting and was picked to draw Matisse's portrait for a medallion honoring the painter's career. Yet to his last days, Giacometti was still trying to live up to those boyhood words, and claiming that he'd failed.

Of course, the idea of painting one's own perceptions and disregarding conventional views of reality was not born with Giacometti. It is at the heart of modern art. "Exactitude is not truth," declared French painter Eugène Delacroix. "Accurate drawing is dry and destroys the impression of the whole, it annihilates all sensation," said Impressionist Camille Pissarro. "Don't proceed according to rules and principles, but paint what you see and feel."

Although Giacometti enjoyed early success among the Surrealists in Paris in the 1930s and later as a radically original portraitist, it was his tall, spindly, vanishingly thin bronze sculptures of walking men and standing women that captured the world's imagination. An unprecedented exhibition of his work—nearly 200 paintings, drawings and sculptures—opened last month at New York's Museum of Modern Art to coincide with the centennial of his birth. "One of the great struggles in the history of 20th-century art," says the show's cocurator, MoMA's Anne Umland, "is that between abstraction and figuration, the ideal and the real, and this all comes together in Giacometti's work." On view through January 8, 2002, the exhibition, which had an initial showing in Zurich this past summer, is a collaboration with the Kunsthaus Zurich and the Alberto Giacometti Foundation in Switzerland, which allowed many of the artist's original plaster models to travel. Because of their fragility, this is the first time many of these original

◆ BY PAUL TRACHTMAN

"In the street, people astound and interest me more than any sculpture or painting," said Giacometti (depicted at age 20 in his *Self-Portrait* of 1921). The small bronze figure (opposite) is one of five that compose his 1948-49 sculpture *City Square*.

plasters, usually seen as bronze castings, will be on view in this country. In their ghostly white frailty, they offer a unique window on the world of images that Giacometti saw, and tried to show us.

As the son of the Swiss painter Giovanni Giacometti, Alberto first looked at the world through his father's Postimpressionist eyes. In the cocoon of Giovanni's studio in the town of Stampa in Italian-speaking Switzerland, Alberto also formed a lasting habit of studying and copying works of art—both ancient and modern—as a way of seeing for himself how others see. With his father's guidance, he made his earliest drawings, paintings and sculptures using his family for models. Such artistic activities were a big part of his early years—by age 10 he had progressed from a simple illustration for *Snow White* to a detailed copy of Rembrandt's *Good Samaritan*. He had an idyllic childhood, swaddled in his father's encouragement and the praise of his adoring mother, Annetta. Even in boarding school he was admired as a budding artist, and given his own studio. His first bust, made in 1914 when he was just 13, was of his year-younger brother, Diego, who would become his lifelong assistant and whose head he would portray again and again.

His brother Bruno, six years younger, remembered Alberto's initial attempt, the following year, to capture him in clay. Still learning traditional techniques, Alberto wanted the bust to be exactly life-size. "He had an old, rather rusty pair of compasses that he used to measure my head," Bruno later recalled. "I was scared whenever he came near my eyes with the points. It seemed to me as though he wanted to gouge them out." When he would seek refuge with his mother, Bruno added—a furious Alberto and his compasses in hot pursuit—she usually "took the artist's side."

Many years later, after Giacometti had achieved fame for his own way of seeing, he tried to explain his unique vision. Pointing out that Rodin had always used instruments to measure the roundness of a head, Giacometti argued that we only see a head as round because we know it is. What we actually see when we look at a face or profile is a rather flat image, more like a primitive mask than one of Rodin's busts. "I think," he said, "we have for so long automatically accepted the received idea of what a sculptured head should look like that we have made ourselves completely incapable of seeing a head as we really see it."

In 1920, during a break from his studies at an art school in Geneva, Giacometti accompanied his father on a trip to install an exhibition of Swiss artists at the Venice Biennale. For the young Alberto, it was a profound moment. "During my stay in Venice," he later wrote, "I loved and was carried away only by Tintoretto. I spent the whole month running through the city; the thought that I might miss seeing even one of his paintings . . . left me no peace." Looking at Tintoretto's work, with its elongated and often sketchy figures almost melting into light and space, as well as its anamorphic perspective (a calculated distortion that made figures appear normal when viewed from a certain distance or seen from below), "a curtain," said Giacometti, "went up on a new world."

But on the way home from Venice, the young artist visited a church in Padua filled with frescoes by the Florentine artist Giotto, who painted two centuries before Tintoretto. These works, wrote Giacometti, "gave me a crushing blow in the chest." Simple in form and floating in a flat space, Giotto's figures violated every rule Giacometti knew. That evening, as he walked behind several young girls in the street, he had a disconcerting vision. "They appeared immense to me, all out of proportion to

Giacometti's first truly modern sculpture, *Torso* (1925), reflects the influence of Romanian sculptor Constantin Brancusi.

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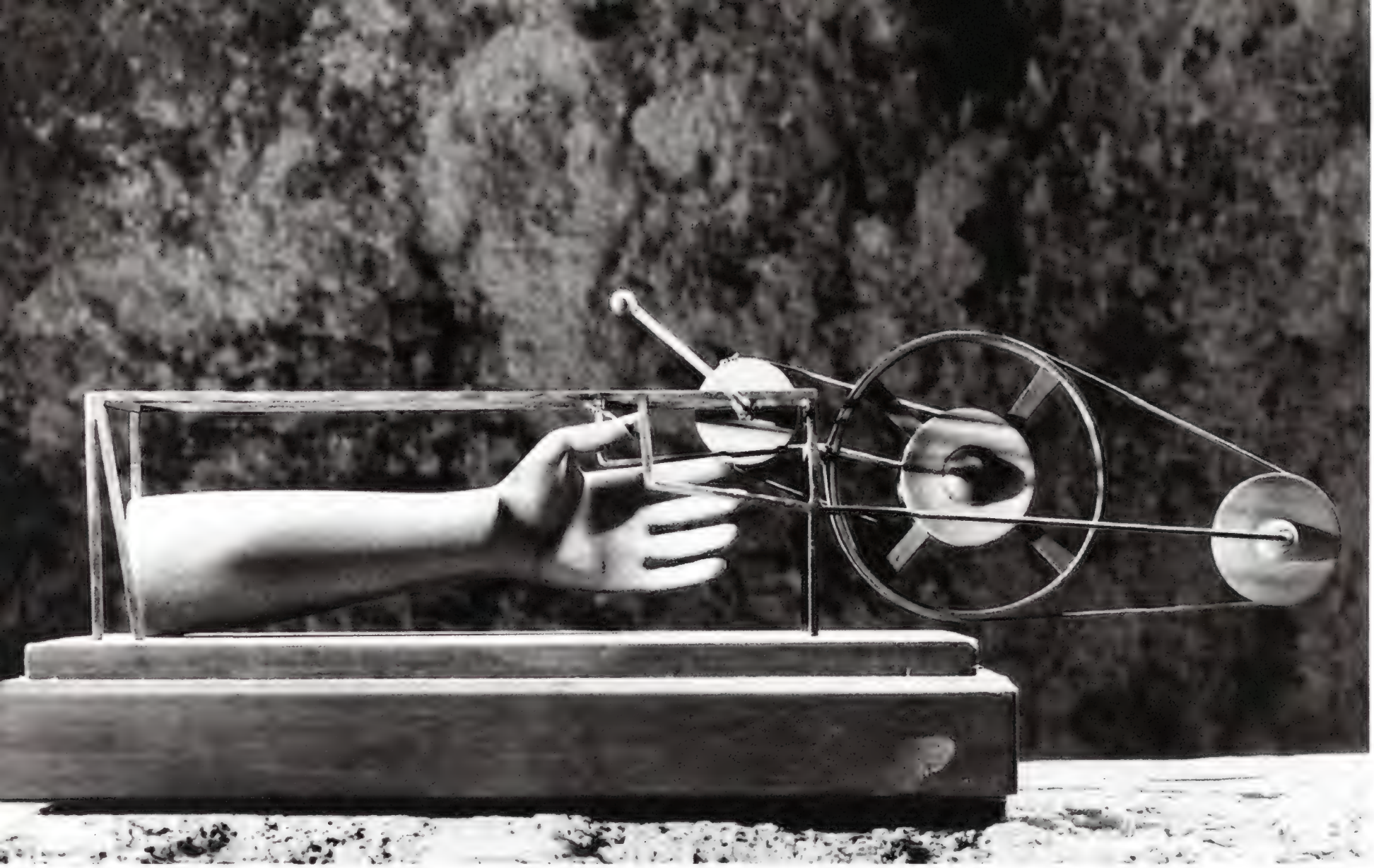


During the early 1930s Giacometti's Surrealist work assumed a somber, almost sadistic character, as in *Caught Hand* (1932).

normal size," he said. "I stared at them like a madman, fear shot through me. It was like a fissure in reality." His almost hallucinatory vision suddenly rendered the works of Tintoretto and Giotto "small, meaningless, weak, and insipid."

Not yet out of his teens, Giacometti was asking questions about perception—about truth and illusion—that would challenge and confound the best philosophers and scientists of the century. Even before the trip to Venice, at home in his father's studio, the artist had begun to see the difficulties his need to portray the world as he saw it would get him into. "I was in his studio drawing some pears that were on a table, at the normal distance for a still life," he recalled. "And the pears kept getting tiny. I'd begin again, and they'd always go back to exactly the same size. My father got irritated and said, 'But just do them as they are, as you see them!' And he corrected them. I tried to do them as he wanted but I couldn't stop myself. . . . Half an hour later they were exactly the same size to the millimeter as the first ones."

At 21, Giacometti moved to Paris and enrolled in an art academy to study with the well-known sculptor Emile-Antoine Bourdelle. But drawing a live model seemed as impossible to Giacometti as drawing his father's pears. If "one began by analyzing a detail, the end of the nose, for example, one was lost," he later wrote. "The distance between one side of the nose and the other is like the Sahara, without end, nothing to fix one's gaze upon, everything escapes."

Still there was no lack of new ideas to excite a young artist in Paris in the 1920s. As Dada had defied all logic, and Cubism had cut all imagery to pieces, Surrealism focused the attention of artists and writers on the subconscious. In an attempt to turn the psyche inside out, the movement probed the world of dreams and chance effects and looked to tribal art for iconic images.

Like Brancusi, Picasso, André Breton and Salvador Dalí, Giacometti found himself fascinated with the "primitive" art of Africa and other non-European cultures. Tormented by the uncertainties of perception, he also experimented with an escape into abstraction. A sculpted piece titled *Torso* (opposite), which seemed partly geometric and partly organic, representing cutoff segments of a trunk and two legs, won him a place in the 1925 Salon des Tuileries in Paris. Although clearly a nod to Brancusi, Giacometti's sculpture, with its sliced-off slabs, angles and curves, looks as if it's about to leap from abstraction back into flesh. A year later the artist produced his first large Primitivist work, the nearly five-foot-tall sculpture *Spoon Woman*, inspired by the people-shaped spoons made by the Dan tribe of West Africa. The next few years saw a prolific outpouring of pieces that resonated with Cubist, Surrealist and African influences, even as Giacometti continued

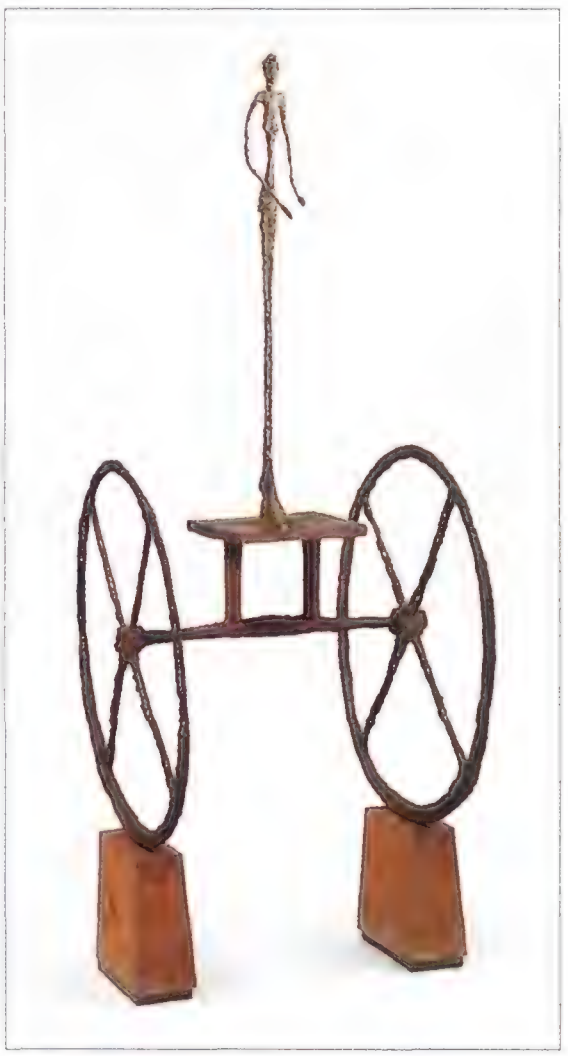
ERNST SCHEIDEGGER/NZZ PRO LITTERIS ALBERTO GIACOMETTI FOUNDATION, ZURICH

sculpting more realistic busts of his parents during vacations in Stampa.

With one foot in the world and the other in an inner landscape of abstraction and imagination, Giacometti was soon attracting attention. Two of his sculptures were shown in the 1926 Salon des Tuileries, along with works by Léger, Mondrian and Brancusi. An explosion of purely Surrealist works followed—objects in boxes and cages, strange game boards and symbolic constructions that begged for Freudian interpretation.

In 1930 Giacometti constructed an object that astonished even the Surrealists. After seeing the sculpture, titled *Suspended Ball*, in a Paris gallery, Dalí described it as follows: "A wooden ball with a female notch floats suspended on a violin string over a moon scythe form whose blade almost touches the groove." The piece, later characterized by one art historian as "an erotic machine . . . for the disconnection of the sexes," was purchased by Breton, who invited Giacometti into the Surrealists' inner circle. For the next few years, the artist turned out abstract expressions of anxiety, aggression and ambivalence. In 1936 the Museum of Modern Art acquired one of his most complex and ethereal constructions, *The Palace at 4 AM*—a wood sculpture, similar to a miniature stage set, that featured symbolic images of Giacometti, his mother and a recent lover. In 1940, the influential American collector Peggy Guggenheim purchased a piece that she thought resembled "a strange medieval animal." It was titled *Woman With Her Throat Cut*.

The first half of the Museum of Modern Art exhibition focuses on Giacometti's Surrealist work. "Going through the first part of the show," says MoMA's Anne Umland, "you realize that even if his career had stopped here Giacometti would still have been one of the major artists of his time." But for all the growing recognition of his work, the real significance of these pieces was in how they altered the history of sculpture itself. Many of the objects were placed directly on the floor without any base. Others, like the game boards, turned the base itself into the sculpture. Although some of these ideas had been explored by Brancusi, and sculptures with moving parts were also being made by a young American in Paris named Alexander Calder, Giacometti's work seemed startlingly new.



Although evocative of ancient civilizations, *The Chariot* (1950), said Giacometti, was inspired by a clanking hospital wagon.

Yet the artist himself characteristically feared he was on the wrong path. As he began to work again with heads and figures, he made so much of the difficulty that his sense of failure—along with his striking, almost dissolute appearance—became his trademark. In his remarkable book *Giacometti: A Biography in Pictures*, the historian Reinhold Hohl quotes Anatole Jakovsky, a writer of the day: "No one else has expressed the anxiety of the present as he has. He is the man who burns. I have seen his face always pale, his eyes blazing, his hair charged with electricity, attracted by celestial gravitation."

If Giacometti doubted he could copy what he saw, he was in good company. The Impressionist Pierre Auguste Renoir was irritated by the slowness of his own perception. "At the start I see my subject in a sort of haze," he admitted. "I know perfectly well that what I shall see in it later is there all the time, but it only becomes apparent after a while." Edgar Degas reworked his drawings endlessly, on sheets of tracing paper, and even Giacometti's contemporary Henri Matisse sometimes revised drawings until the paper was furrowed with erased lines. But throughout Giacometti's artistic struggles, it was the example of renowned Postimpressionist Paul Cézanne—who had wrestled with the same questions and persevered to leave an indelible mark on the way we see the world—that kept him going. The 30th anniversary of Cézanne's death was commemorated in 1936 with a museum exhibition in Paris. Although Giacometti had long been familiar with Cézanne's paintings, it seems no coincidence that only a year later he painted one of his first masterpieces—a Cézanne-like still life with apples. Or rather, it began with a few apples set on a sideboard, and then he removed all but one, remarking, "there was more than enough to do with one."

For 30 years, Giacometti lived in the same studio and bedroom in a run-down corner of Montparnasse. Even when fame brought New York dealers and rich French collectors to his door—and sales brought enough

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Both Giacometti's wife, Annette, and his brother Diego (with him c. 1952 in his Paris studio) dedicated themselves to assisting the artist.

money to stuff under his bed and give away—he lived frugally. His brother Diego became his indispensable aide, overseeing the casting of bronzes, and sometimes rising early to salvage a new plaster sculpture the artist had labored over all night, before he could wake up and destroy it in the morning, as he was apt to do. "One starts by seeing the person who poses," Giacometti once explained, "but little by little all the possible sculptures of him intervene. The more a real vision of him disappears, the stranger his head becomes."

As Giacometti gouged, squeezed and scraped away at the plaster, his busts and figures kept shrinking. In a typical example of the way he worked, wrote his biographer and friend, James Lord, Giacometti "started with a figure about 18 inches high, representing a nude woman with her arms at her sides. . . . After several months of work, the figure had shrunk to the size of a pin, standing in precarious isolation upon a pedestal several times its own height."

As Giacometti's sculptures were shrinking, the threat of war was growing. Picasso, who had met Giacometti in Paris, invited him to his studio to observe the progress on his monumental mural *Guernica*, in which the dismembered anatomies of Cubism matched the realities of war. Giacometti would see such brutality with his own eyes soon enough; as he and Diego fled a besieged Paris in May 1940, they encountered scenes of carnage along the road where a column of refugees had been strafed. The brothers returned to Paris, but Giacometti left in December 1941 for Switzerland. Diego stayed behind to take care of the studio and remained in Paris until the end of the war.

In Geneva, Giacometti found a studio on the top floor of a cheap hotel, where for the next three and a half years he resumed his Parisian habits of daily struggle relieved by late nights in local cafés. The longer Giacometti stayed in Geneva, the smaller his sculptures became. "It was a mystery to me," he said. "All my figures stubbornly shrank to one centimeter high. Another touch with the thumb and whoops! — no more figure." A friend who visited the studio saw a

ALEXANDER LIBERMAN/LIBRARY, GETTY RESEARCH INSTITUTE, L.A. (2000.R.29)

Diego spent endless hours, days and weeks posing. In this 1954 bust, Giacometti's gouged surfaces convey a sense of physical energy and drama.

washstand around which stood a group of sculptures. "The sizes of the figures were so tiny," he said, "that the sink, in comparison, looked like an ocean (or at least like Lake Geneva)." The publisher Albert Skira recalled: "One morning after the war had just ended I visited Alberto in his hotel room. He was to return to Paris the next day. I asked him: 'Have you shipped your sculptures yet?' He replied: 'No, I'm taking them with me.' He pulled six matchboxes from his pockets. In them was the work of those years."

Among the many wonders at the MoMA exhibition, these tiny figures may be the most astonishing. Giacometti constantly referred to them as failures, but even at a distance, they appear as complete as a marble statue by Michelangelo, and somehow more real. Yet as you approach them, the figures seem to maintain their distance and remain incredibly small. Looking at them is to meet Giacometti as a genius who knew exactly what he was doing. "I want a figure which can be grasped with a single glance and in its totality," he told a friend in Geneva.

It was also during the Geneva years that Giacometti met the young woman he would later marry. Annette Arm, who fell in love with him despite his closeness to and dependence on his mother, his attraction to brothels, his obsession with his work and the anxieties of his psyche, was as vivacious as Alberto was dour, but she seemed to idolize him. From her parents' point of view, writes Lord, "Alberto Giacometti was a shabby, unsuccessful, eccentric, poverty-stricken artist well into middle-age [he turned 42 in 1943 the year they met] whose only source of support was an aged mother." But Annette would have followed him to Paris if he'd let her. Instead, he returned alone, had a brief affair with an old flame, and went on working.

Annette kept after him, however, and the following year she arrived to share his life and his studio. For her first evening in Paris, Giacometti took her to dinner at the Café des Deux-Magots with Picasso and fellow artist Balthus. Moving into the studio was a little less glamorous. Simone de Beauvoir, who said of Annette, "She devoured the world with her eyes," described how Giacometti lived. His house, she wrote, "is enough to frighten anyone. In a charming little forgotten garden he has a studio, drowning in plaster, and he lives next to this in a kind of hangar, vast and cold, with neither furniture nor food. . . . He works very hard for fifteen hours at a stretch, above all at night, and whenever he goes out his clothes, his hands and his thick, matted hair are covered with plaster."

Giacometti had insisted that Annette not change the way he lived, and she left things as they were. But of course she changed everything. She introduced him to intimacy and believed in him, for better or worse. She became his model, his muse and, after a few years, his wife. She sat, or stood, for days that stretched into years, enduring along with Diego the task of meeting the artist's demanding gaze and coping with his anxiety and outbursts of rage and distress. Annette's features lent themselves to Giacometti's fascination with Egyptian sculpture, and as she posed, Giacometti could see in life what he had sought in his copies from antiquity.

The Egyptian influence, and Annette's, is evident in the striking series of tall, thin standing women with arms tight against the body that soon populated Giacometti's studio and for which, along with his equally elongated, straight-legged men, he is best known. "In 1945 I swore to myself that I didn't want to let my figures get smaller and smaller," he said. "But now the following happened: I could maintain the height, but they started to get narrow, narrow . . . tall and as thin as a thread." These somber, startling figures, cast in bronze, were soon augmented by a rush of new work—a spectral woman standing on a chariot; a group of strangers passing in a city square; a hollow-mouthed head of a man stuck on a rod; a spindly, falling figure with arms outspread, as if leaping into the void.

As people absorbed images of the Nazi Holocaust in the years after the war, these works were easily taken to be expressions of alienation and

In 1962, Giacometti created a series of eight busts of Annette that typify his late, more expressionist style and capture her character.

DAVID HEALD/GUGGENHEIM FOUNDATION, NY. NASHER COLLECTION, DALLAS; HIGH MUSEUM OF ART, GEORGIA. GIFT OF SARA LEE CORPORATION (1999.40)

despair. But while Giacometti could talk like an existentialist philosopher, his art was always more instinctive than intellectual.

In his postwar paintings and drawings of Annette and Diego, of friends like Jean-Paul Sartre and Henri Matisse, playwright Jean Genet and composer Igor Stravinsky, Giacometti produced a series of extraordinary portraits unlike anything else in modern art. The figures in these portraits seem on the verge of dissolving into the space around them, their edges and contours eroded by the artist's destructive brush strokes. "Giacometti showed that space is an emotional, emotive, intuitive experience," says Valerie Fletcher, a curator at the Smithsonian's Hirshhorn Museum and Sculpture Garden and organizer of its 1988 Giacometti exhibition.

Throughout his life, Giacometti drew constantly, often with a ballpoint pen on handy newspapers or magazines. His pen flowed, blurring outlines as his perceptions kept changing, representing what he called the "lines of force" in a face or figure; and he slashed across forms in vertical and horizontal strokes that embedded an image in the indeterminate space that so intrigued him. "I can't draw," he said. "So I go on drawing." (When he was working on a portrait of the 84-year-old Henri Matisse, the elder artist said much the same thing: "Nobody can draw! Nobody will ever be able to draw! I have tried my whole life . . . and I have never managed it!")

Beginning in about 1956, Giacometti produced some of his most hypnotic sculptures and mesmerizing paintings, but remained as unsatisfied as ever. He spent three years trying to make portraits of a Japanese philosophy professor and paid the scholar's way back and forth between Tokyo and Paris, until he became one of the most expensive models in the history of art. Giacometti also became infatuated with a prostitute called Caroline, whom he met during nocturnal visits to his favorite cafés, and painted her portrait repeatedly for years. In painting Caroline, he seemed to see a transcendent vision, almost a goddess. There's an intense gaze in these and other late portraits that is haunting. Yet his last sculptures and paintings of Annette are among the most profound, modern and vibrantly alive of his work, with their crosshatched lines that obliterate, swirling strokes that animate, and gestural painting that blurs the distinctions between his figures and the space they inhabit. Almost as moving are his final portraits of Diego, the brother who remained in the background and put off his own flowering as an artist until after Giacometti's death. Diego eventually won recognition as a distinguished designer of furniture and ceramics.

In 1959, the artist, then 58, became obsessed with Caroline, a 21-year-old prostitute, whom he portrayed in ghostly canvases.

"It seems impossible to do it!" Giacometti cried shortly before he left Paris in December 1965. "To make a head as I see it. It seems impossible to do that. Between now and tomorrow, though, I've got to manage." The next day he departed for a hospital in Switzerland complaining of exhaustion. A month later, on January 11, 1966, he died of complications from heart disease. He was 64 years old. At his funeral in Stampa, his family and friends were joined by a host of admirers, his dealers and European museum officials. Caroline was there, despite Annette's objections. Returning to Paris, Diego retrieved his brother's last plaster sculpture, the bust of an old friend. He had it cast in bronze and placed it on Giacometti's grave, next to a figure of his own—a small bronze bird.

There is an image by an unknown photographer of Giacometti gazing at his *Head of a Man on a Rod*, much as Hamlet contemplated the skull of poor Yorick. Like Hamlet, Giacometti was a romantic spirit confronting the realities of a harsh and uncertain world. "Art interests me very much, but truth interests me infinitely more," he once said. What he left us is the truth of his difficult vision. "I always have the impression or the feeling of the frailty of living beings," he mused. "And it is in their frailty that my sculptures are likenesses." And yet, seen together in this centennial exhibition, they are far more than their frailty. They transcend time.

New Mexico-based author Paul Trachtman is also a painter and printmaker.

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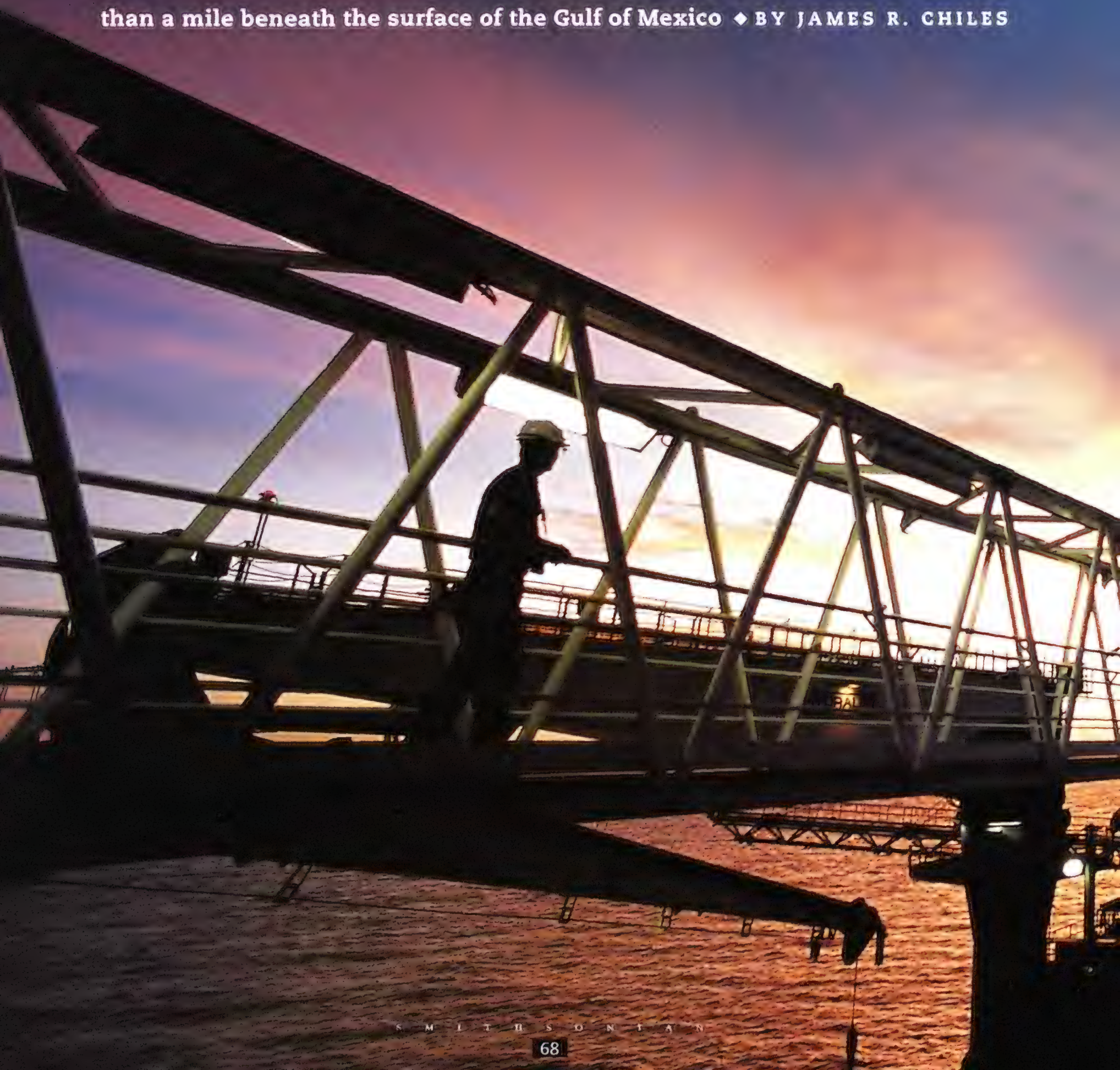
Getting in DEEP

The unending quest for oil has now led drillers to vast reserves lying more than a mile beneath the surface of the Gulf of Mexico ◆ BY JAMES R. CHILES



PHOTOGRAPHS BY LAYNE KENNEDY

Deepwater work requires the 835-foot-long *Discoverer Enterprise* to store nearly seven miles of pipe on her crowded decks.

Drill/Riser Pipe and Spare

BOP

Drill Bit

ROV

The *Discoverer Enterprise* digs a deepwater well. With input from satellites, computers control ship position with underwater thrusters. Pumps force mud down the mile-long drill/riser pipe and back up, lubricating the drill bit and removing debris. A remotely operated vehicle (ROV) maintains the blowout preventer (BOP).

MIKE O'HARE IS SITTING JUST THREE FEET FROM ME IN THIS DARKENED CONTROL ROOM ON the ship *Discoverer Enterprise*, but his attention is a mile away. His rather peculiar task at 2 A.M. this recent Thursday is to spray antifreeze on the ocean floor, 75 miles south of the Mississippi Delta in the oil rich Gulf of Mexico. He's using a $6 million remotely operated vehicle, or ROV, for the job. Guided by sonar and an onboard video camera, O'Hare maneuvers the minivan-size craft with a joystick, monitoring its movements on a video screen, which lies at the far end of a tall rack of sonar and computer equipment. The screen reveals a brawny, metallic arm with a claw at the end holding a rubber hose from which antifreeze diffuses around the base of a massive yellow structure. "It looks like I'm fumigating for mosquitoes," says O'Hare to his three-person crew. "Deep breeders."

Deep indeed: the seafloor lies more than a mile beneath us.

Just outside the control room the Gulf air is balmy, but on the sea bottom the water temperature is near freezing, and the water pressure is more than a ton per square inch. Beyond the reach of the ROV's headlights, the abyss is as black as the inside of an oil drum. The ROV is working a chasm across the northern Gulf of Mexico called the Mississippi Canyon.

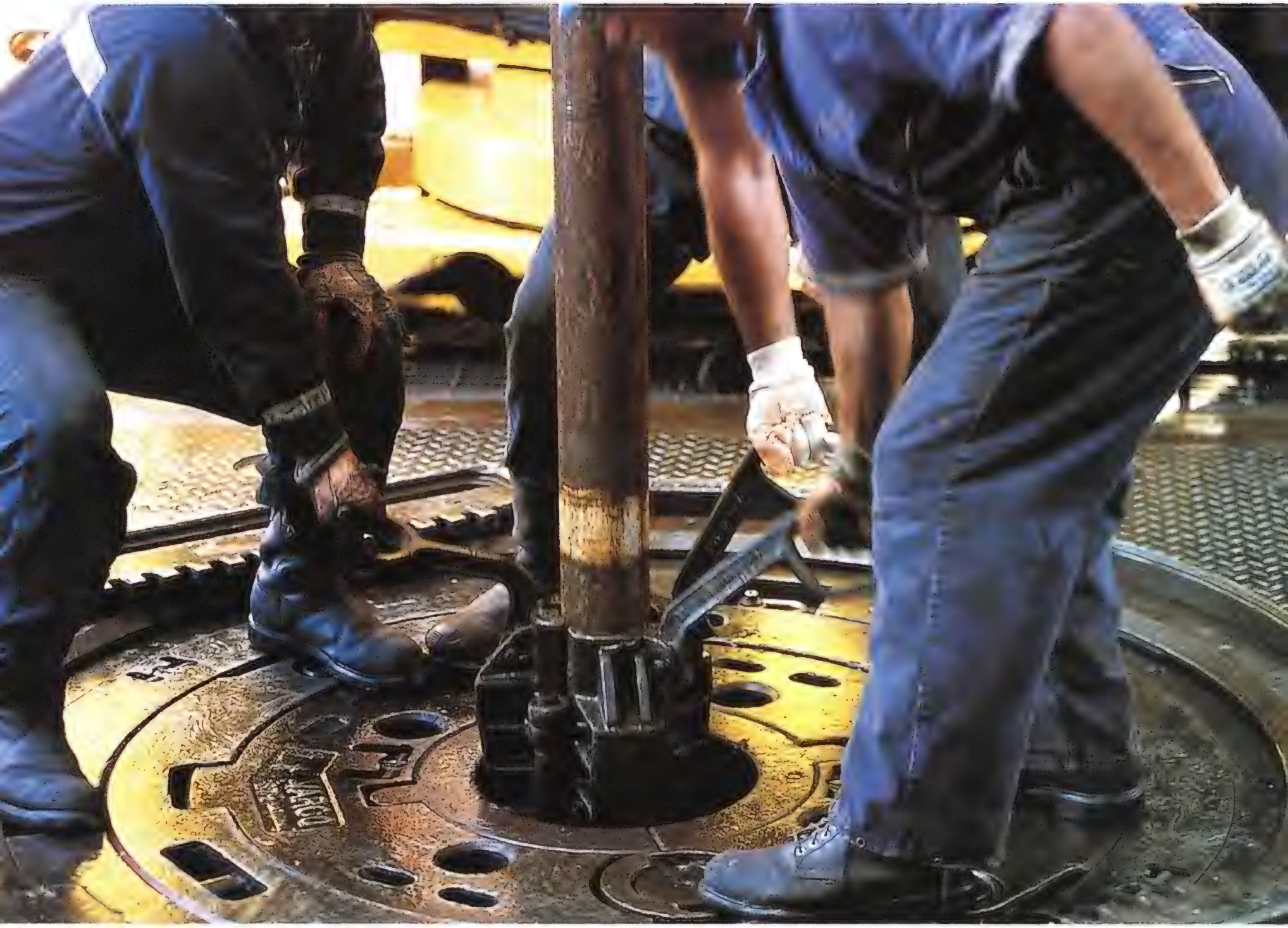
The object of O'Hare's attention is a safety device atop an underwater oil well, which has developed a worrisome mechanical problem. This well is a signpost of sorts, showing how thirsty for oil America has become and the extraordinary lengths our nation will go to find it.

Hunting for oil in deep water requires deep pockets. Drilling this well, the Crazy Horse No. 2, costs about $330,000 a day. Some of that goes to pay Transocean Sedco Forex, the world's largest offshore drilling contractor, for the use of its brand-new drill ship. Some goes to a horde of specialized companies, such as O'Hare's employer, Oceaneering International. The rest covers the vast logistical expenses, including teams of land-based engineers, necessary to support a 150-person crew working far offshore.

My visit to the 110,000-ton drill ship *Discoverer Enterprise* comes only a few weeks short of the 100-year anniversary of the Gulf area's first oil boom, the January 1901 gusher at the Spindletop field on the Texas coast. The drillers of that early well, the Hamill brothers, charged $2 for every foot they drilled. By contrast, this project is running more than $2,400 a foot for a hole more than four miles deep. You might think such numbers would send corporate bean counters screaming for the exits, but because the potential is so vast, BP and its partner, ExxonMobil, are happy to pay up, even with the delays and difficulties inevitable during a new vessel's shakedown. This is only the second well drilled into the Crazy Horse field, the biggest reservoir yet found in the Gulf. Crazy Horse holds upwards of a billion barrels of oil. By comparison, over its first hundred years, the Spindletop field pumped out a grand total of 150 million barrels.

But American use of oil has also soared since Spindletop: the 20 million barrels of oil the nation uses each day represents about half the daily flow of the Potomac River as it enters the District of Columbia. Deepwater Gulf wells are holding out hope for a nation faced with growing dependence on petroleum imports, especially in the wake of escalating terrorism in the United States and the world. Impossible only two decades ago, the wells now contribute about a tenth of the nation's oil and gas production, and their share is projected to nearly double in the next five years. When I mentioned to a helicopter pilot that daily flights to and

HAROLD SMELCER



Sometimes there's no high-tech substitute for old-fashioned manpower, but automation accomplishes nearly all tasks on the *Enterprise*.

from offshore platforms must be hugely expensive, he laughed and said that helicopters are pocket change for a platform that pulls out $2 million worth of oil and gas each and every day. What the industry calls "deep-water play" is one of the few drilling frontiers left in the world that can make a giant oil company even bigger. (Of course, another potentially rich source is "land play" in the Arctic. Extracting oil from Alaska's Arctic National Wildlife Refuge remains one of the Bush Administration's most controversial initiatives.)

Here, on the *Discoverer Enterprise*, a 226-foot-tall derrick enables two deep wells to be worked simultaneously. A space the size of a basketball court lies underneath the derrick floor. It's left open so the crew can stash the massive tools of their trade, such as the ship's blowout preventer (BOP), when moving from one well to another. At the center of this space is something called the moonpool, which looks like a swimming pool and lets the drilling gear pass through the ship's hull and down into the water. A drill pipe drives a bit into the rock of the seafloor. It carries a thick slurry of clay, water and additives down from the ship, out the cutting bit and back up the hole and into the riser pipe, returning to the ship. While drilling, the ship sits still in the water, held in place by six giant steerable propellers, called thrusters. "It's the biggest and baddest drill ship in captivity," Daun Winslow tells me.

As offshore installation manager for Transocean, Winslow is one of three key decision makers on board, along with vessel master Ed Ruth and BP representative Tommy Patterson, known widely as the "company man." The lines of authority are clear: if the ship is under way, Captain Ruth is the boss, but for major decisions while the ship is parked at a well, the installation manager calls the shots. One manifestation of Winslow's power is a subsea control panel, which overlooks the main deck. From his perch, he can override any command, cut the drill pipe and even kill the well.

Of course, not everything works by remote control. Nor as planned. Today the ship's crew had hoped to wind up its work on Crazy Horse

On one occasion, a massive hunk of steel dropped through the roof of the control room.

No. 2, dismantling the riser pipe, capping the well, pulling up the BOP and moving on. But a malfunction holds the *Enterprise* to the seafloor 6,300 feet below. The difficulty lies somewhere inside the BOP, a 47-foot-high, 360-ton steel package of valves, electronics and hydraulic gear. Back in 1919, a wild well in Liberty County, Texas, inspired James Abercrombie to sketch out the first blowout preventer, a device capable of clamping down in an emergency to keep oil and gas from running out of control. The *Enterprise*'s BOP is a sophisticated descendant of Abercrombie's discovery.

In the early days of oil, the surest sign of a good well was a gusher spouting crude high into the air. One well at the Spindletop field blew for eight days, filling artificial lakes, until the drillers wrestled it under control. Today oil workers would call such a gusher a "blowout," something *nobody* wants. A blowout drains pressure from a reservoir and turns valuable petroleum into a stinking mess that makes for costly cleanup jobs.

Deepwater Gulf wells tend to produce much more oil than their land-based counterparts because this section of the Gulf's seafloor is covered with a thick bed of organic matter from the Mississippi River. Whereas a garden-variety Texas well might turn out 20,000 barrels of oil in a decade, Crazy Horse No. 2 should yield that much in a single day. Such quantities raise the stakes of a blowout. In Campeche Bay, Mexico, in 1979, a shallow well called Ixtoc 1 spewed 10 million barrels of crude over the course of several months.

According to Larry Flak, vice president of Boots & Coots/International Well Control, the risk of a disastrous deepwater blowout is very low, given both the precautions taken and the physics involved. A blowout preventer stopped the giant P-36 rig off Brazil from causing a crude-oil spill onto the seafloor when the platform capsized and sank in March 2001. Flak, who headed up the 1991 oil field fire-fighting effort in Kuwait after the Iraqi retreat, says there has never been a deepwater oil-well blowout. Depth is an ally: in shallow water, escaping petroleum shoots straight to the surface from the seafloor, engulfing the rig in explosive gases or, worse yet, a firestorm. But in a mile-deep blowout, water pressure would help staunch the leak from the well; the slow sideways current of the open ocean would then sweep the oil and gas far from the rig, where it would disperse long before it could reach the surface. That would allow the blowout repair crew to get to work without delay, operating from the rig itself.

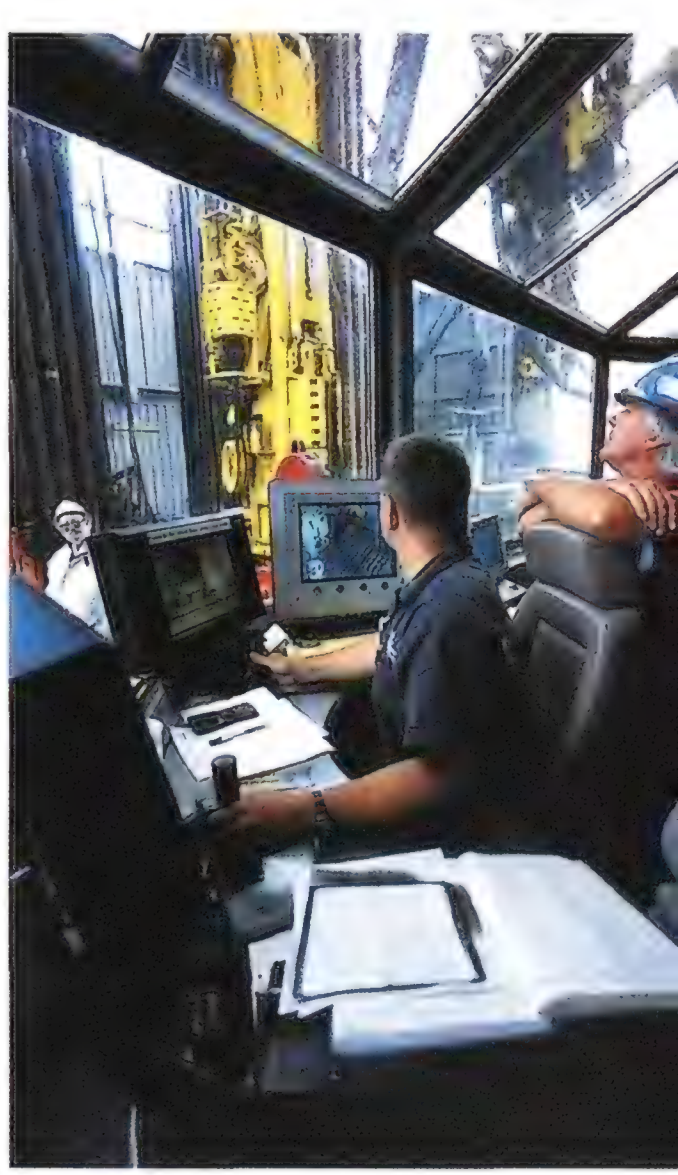
But Richard Charter, marine conservation advocate for Environmental Defense, believes that the risk of a large oil spill from deepwater wells is real. "Conditions at this depth are poorly understood," Charter says. Citing trouble the industry has had in pinpointing the source of leaks in shallow-water equipment off California and Alaska, he predicts that deepwater leaks will be difficult to locate and fix using remote control technology. Deepwater oil spills could drift long distances on undersea Gulf currents before surfacing, perhaps coming to rest on the sugar-white beaches of Florida's west coast. "Anybody saying there aren't increased risks to the environment from deepwater drilling isn't paying attention to the facts," he adds.

Now, on the *Discoverer Enterprise*, the BOP is acting like a gigantic padlock binding the ship and its riser to the seafloor.

On his pilot's view screen, O'Hare can see every detail of the frame of the big yellow BOP down below. The plan is to raise one of the ship's two ROVs to the surface. Once one machine is back on board, the crew can install more equipment for the next attack on the problem.

It's 4:30 A.M. O'Hare is still on the job and he's frustrated. The problem, it turns out, is only a stuck latch. O'Hare, who has 13 years of deep-sea diving experience, can see every detail of the BOP on the TV monitor, but that's as close as he's going to get. A mile of water is far deeper than divers ever go. That means all wrench work must be carried out by ROVs.

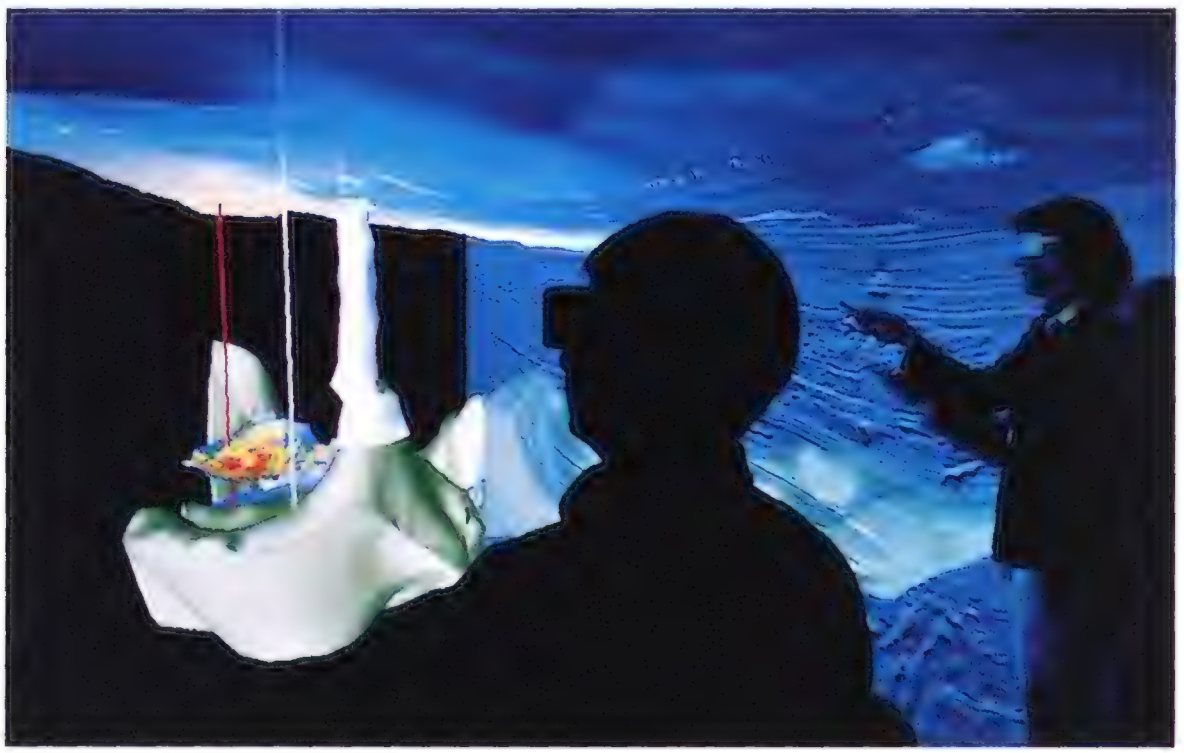
The problem is particularly annoying because the ship has been working on this unusually difficult well for eight months—three months longer than planned. The crew hopes this will be the last in a string of mishaps.



Offshore oil duty has its rewards: for every week worked, oil workers (in the drilling control room) get a paid week off.

As we've done all day and night, we stare at the latch-unlatch indicator on the television screen.

During sea trials, a half-mile-long string of drill pipe unscrewed while hanging from the derrick and fell to the seafloor, narrowly missing one of the unmanned ROVs. On another occasion, a set of weights, called a drill collar, came free from a bracket in the derrick, broke in half and dropped a massive hunk of steel through the roof of the drilling control room. This is new technology, so there are lots of difficulties in the early stages.



An existing oil well shows up as a thin red line on a 3-D projection in Houston of the ocean floor. Geophysicists use the technology to locate potential well sites.

O'Hare tells me that the leading theory about the *Enterprise*'s problem is that a strange deep-sea solid called methane hydrate—a special form of ice that traps natural gas within its crystalline lattice, and exists only at low temperatures or high pressure—is jamming the latch down on the seafloor.

Although methane hydrate is at present a never-ending headache, one day it may turn from bane to boon: geologists speculate that the natural gas trapped in methane hydrate below the seafloor probably exceeds all the gas in porous rock. Collecting is difficult because the gas is so thinly spread across thousands of square miles of seabed. The Department of Energy is conducting studies on how to tap this resource.

Inside Oceaneering's control room, I find that the view on the TV screen hasn't changed since the problem began 18 hours ago: an ROV camera fixed on the latch indicator still shows that the mechanism is locked despite repeated attempts to cycle it open by remote control. Now Captain Ruth orders his navigator to program the thrusters to steer the ship in a slow circle around the wellhead, hoping this will wiggle something loose down below. And the drilling crew is pumping surface water down the drill pipe to soften any methane hydrate.

As day turns to night, the elaborate support network typical of high-dollar offshore work is mobilizing. Oceaneering sends out a relief crew a day early by helicopter. Transocean rushes out a hydraulics expert.

It's now been nearly 24 hours. Oceaneering's ROV drops back down to the seafloor with another load of antifreeze to inject directly into the BOP. As we've done all day and night, we stare at the latch-unlatch indicator on the screen. I've entered a Zen state.

Then, at 9:36 P.M. Thursday night, 28 hours after the problem began, the indicator on the BOP swings mysteriously toward "unlatch." Half a dozen engineers and technicians jam into the little space around the monitor to confirm the sight for themselves. The tense, unhappy mood in the control room clears instantly; the crew break into broad smiles, and there's an outburst of joking and backslapping. Work that has been suspended by the latch problem resumes within minutes. By 3:30 A.M. Friday, Oceaneering's cameras confirm that the BOP is free of the seabed. But they can't say what went wrong. Maybe the problem was hydrates, which finally thawed away; maybe it was something mechanical that wiggled loose. There is simply no way to know.

A few hours after the riser comes loose, Mike O'Hare and a gang of other crew members pick up their duffles and climb aboard a waiting helicopter, bound for a two-week shore leave. By the time they get home, the *Enterprise* will be working on the King well, 62 miles to the northeast. The new ship has passed through its shakedown period.

As I watch the crew hustle into the helicopter, it strikes me that I'm seeing a special breed of worker. Americans climbing out of the Great Depression took pride in damming great rivers and stringing power to distant farmsteads. The deepwater drillers have this same can-do spirit. Offshore oil workers operate on a big scale, out here, far beyond the horizon.

James R. Chiles is the author of Inviting Disaster: Lessons From the Edge of Technology. *Photographer Layne Kennedy shoots often for* SMITHSONIAN.

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Roots of Rhythm

"WITHOUT ROOTS MUSIC, THERE would be no American music or modern popular culture today. No jazz, no rhythm & blues, no pop music, no rock & roll, no Beatles, no Rolling Stones, no MTV, no rap," writes singer Bonnie Raitt in *American Roots Music*, published this month by Harry N. Abrams. The book is based on a PBS series of the same name, which begins airing October 29. Roots music is the old work and folk songs brought by European immigrants and African slaves to this country. It includes the sounds of our musical heritage—the blues, gospel, country, bluegrass, Cajun, zydeco and Tejano—that influence today's popular music, especially rock 'n' roll.

The legacy of roots music has filled our lives with styles as diverse as the twang of Bob Dylan and the smooth harmonies of Motown, from venerable crooner Tony Bennett to crossover pop artist k.d. lang, with whom Bennett toured this past summer. A century ago, folk music was an oral tradition passed from one generation to the next. After World War I, Americans migrating to cities took their music with them, and radio stations broadcast it to wider audiences. Musicians listened to one another, and gradually their sounds intertwined and changed to create new music. "People—like young Elvis Presley—began listening to gospel and black music on Sunday morning radio programs, while at the same time young future rock & roll and soul singers in Detroit, St. Louis, and Philadelphia were tuning into the Grand Ole Opry broadcast," writes Raitt, who was just 14 years old when she heard a record called *Blues at Newport '63*. "It changed my life. I got it as a gift, and as a young guitar player I learned every single note on the record and played them until my fingers bled."

American Roots (the film and book) result-

THE ORIGINS OF AMERICAN MUSIC—FROM GOSPEL TO COUNTRY, FROM ZYDECO TO THE BLUES—ARE CELEBRATED IN A NEW BOOK AND A PBS TELEVISION SERIES

SEE P. 130 FOR PICTURE CREDITS

International blues icon B.B. King's first publicity photo was taken in 1949, when he was 24, at the Beale Street Studio in Memphis. By 1951, "Three O'Clock Blues," his first hit, had made him a star.

ed from a unique collaboration between the Smithsonian Institution, the Library of Congress, the Rock and Roll Hall of Fame and Museum, and the Experience Music Project (EMP). *American Roots* tells the stories of the songwriters, musicians and entrepreneurs who kept the music changing. "Musical strains cross boundaries and influence one another," writes Robert Santelli, one of the book's editors and deputy director of EMP. "One artist borrows from another, who borrows from yet another. Songs are reshaped with altered lyrics and fresh solos. Reinventions are plentiful, even unstoppable." He adds that the term "American roots music" was created in the 1980s to replace "folk music" and is used "to describe any American music form that had influenced pop music and was a 'root' of rock & roll, or as a simple substitute for folk." In the book, icons Louis Armstrong and Ella Fitzgerald are conspicuous in their absence. But jazz as a genre was intentionally omitted, says Santelli. *American Roots Music* is "not an exhaustive version of this country's roots music history." Instead, it presents "overviews of the major roots music genres, featuring artists whose work is emblematic of their times and whose stories are meaningful and historically significant." It is, finally, the story of that uniquely American gumbo of sounds that welcomes all to the table. —*Marlane A. Liddell*

Willie Dixon, Memphis Slim and Big Joe Williams

Willie Dixon, who often played bass behind Muddy Waters, was a big, round man with a warm heart and a comforting smile. He also had the best ears in the blues business—the quintessential behind-the-scenes Chicago bluesman. "The blues is actually some kind of documentary of the past and the present and something to give people inspiration for the future," said Willie Dixon. "Blues has wisdom. It's always been there." *—Robert Santelli*

Bessie Smith

Bessie Smith was accorded the title "Empress of the Blues," not just because she, more than any other female blues singer of the 1920s, personified the blues but also because her remarkably expressive vocal delivery influenced nearly every other singer who followed—from Billie Holiday to Janis Joplin—with her uncanny ability to wrap her blues essence around nearly every note she sang. *—Robert Santelli*

Ma Rainey and Thomas Dorsey (on Piano)

Rainey sang the blues with raw passion, using an uncut, almost primitive vocal delivery that impacted a young Bessie Smith and other up-and-coming female blues artists in the early 1920s. *—Robert Santelli*
At the heart of gospel's evolution in the Depression era was Thomas Dorsey, a former blues piano player. According to gospel authority Bishop Kenneth Moales, the young Dorsey "would steal away with other friends and relatives and go to the juke joints when Ma Rainey would come through Atlanta." *—Claudia Perry, author and critic*

Woody Guthrie

Woody Guthrie was a folksinger in the classic sense of having a large repertory of traditional songs learned from his family and community. But he also became a prototype of a "folksinger" in the emerging popular sense. A compulsive writer with a keen eye and a sharp wit, he began composing songs on contemporary issues, drawing on classic folk tunes. By the time of his death at age 55 from Huntington's chorea in 1967, Guthrie had become a legendary model for singer/songwriters of the next generation—notably Bob Dylan, but also his own son, Arlo Guthrie. America has inherited from Guthrie the image of folksinger as troubadour of the people, composing songs in a roots style that helps grassroots people reflect on their lives and lots.

—Alan Jabbour, former director, American Folklife Center

Hank Williams

Williams' vocal style and the contending impulses of sin and guilt that lent an appealing tension to his music grew out of the churches and honky-tonks of south Alabama. He rode to the top of the country charts in the early 1950s with a haunting voice and a body of songs, both joyous and anguished, that reached across geographic, class, and stylistic categories. Williams wrote songs that did much to shatter the tenuous walls that had separated country and pop music.

—Bill C. Malone, country music radio host, Wisconsin

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The Weavers

From left: Pete Seeger, Lee Hays, Ronnie Gilbert and Fred Hellerman (at their 1070 reunion re-creating their 1050 publicity photo) The folk music revival, as it turns out, was merely gathering its energies before bursting onto the public stage again in the late 1950s. The Weavers' version of Leadbelly's "Goodnight Irene" found its way into the pop market, keeping alive a sense of the revival as a movement.

—Alan Jabbour

Pete Seeger was a hero and mentor, not just in terms of what he did with his music, but the way in which he incorporated his own values and dreams, and his activism, into a musical setting. *—Peter Yarrow, singer and musician*

Bill Monroe

Bill Monroe crafted a sound like no one else's in American music. With his high-lonesome singing, dynamic mandolin style, relentless energy, and talent for finding gifted musicians, he introduced and popularized a style that enabled acoustic string-band music to survive and prosper in a music business increasingly given over to electronic sounds. Between 1945 and 1948, he and others created a supercharged style of music that folklorist Alan Lomax described as "folk music with overdrive." We now call that sound, and its many derivatives, bluegrass. *—Bill C. Malone*

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The Million Dollar Quartet

From left: Jerry Lee Lewis, Carl Perkins, Elvis Presley and Johnny Cash A telling moment for the Sun Records legend came on December 4, 1956, when a Perkins recording session, with Lewis sitting in on piano, was interrupted by a surprise visit from Presley. Cash, too, was hanging around. Elvis sat down at the piano, and in short order they were into a community sing. They essentially toured their roots in songs that reflected their mutual immersion in the spiritual life and were reflective of their rural upbringing and values. It was a short course in the roots of rock & roll. *—David McGee, Perkins' biographer*

Janis Joplin

In the folk revival of the early 1960s, with a group of artists whose bible was Harry Smith's *Anthology of Folk Music* [an eclectic record collection so popular among musicians it achieved near cult status], a new generation of artists was bringing folk music to mainstream prominence. In San Francisco, the Grateful Dead was led by guitarist Jerry Garcia, who had cut his musical teeth on the *Anthology*. Also in the Bay Area, beginning in 1966, Janis Joplin, with her band Big Brother and the Holding Company, added rock & roll backbone to a repertoire filled with traditional and contemporary blues. *—David McGee*

Bob Dylan

The most important artist to come out of the New York coffeehouse scene was Bob Dylan, who shaped his performance style around Woody Guthrie's model, and composed new songs based on folk genres such as ballads and talking blues. Dylan's songs both tapped the folk reservoir and exhibited a creative knack for capturing the issues and spiritual rhythms of the times. Many, like "Blowin' in the Wind," were picked up by Seeger and Peter, Paul and Mary, as well as by other singers, and became their era's anthems. Today, they sound like musical posters of the 1960s.

—Alan Jabbour

Dolly Parton

A select array of women singers exhibited their links to southern working-class culture while also breaking new ground for their sisters. Loretta Lynn and Dolly Parton sometimes seemed willing to play the role of simple mountain girls, but their masterful performances, rapport with their audiences, and shrewd promotional acumen gave them an edge that most men could only envy. In such songs as Lynn's "The Pill" and Parton's "To Daddy," the pair voiced a plea for women's freedom. Best of all, they emboldened young women to pursue their own independent paths in show business, suggesting in the subtext of their lives and songs: "We made it, and so can you."

—Bill C. Malone

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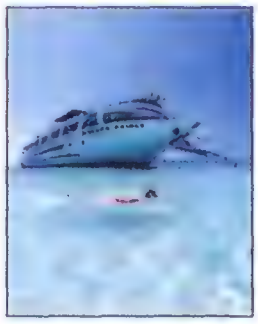

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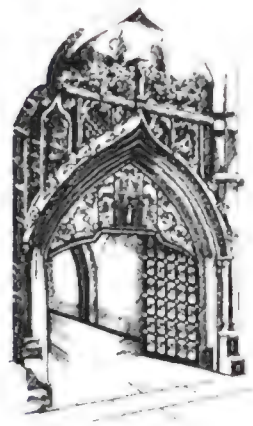

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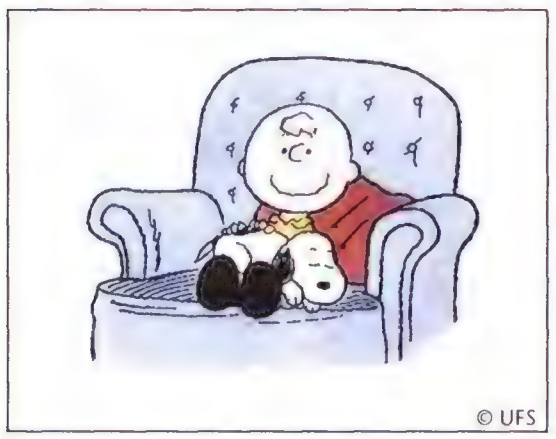

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THE AUSTRALIAN PACT WITH THE WORLD'S LARGEST CROCODILES SEEMS TO BE WORKING—BUT CRITICS SAY THAT THE COSTS ARE FATALLY HIGH

BY DEREK GRZELEWSKI

PHOTOGRAPHS BY MARK S. WEXLER

OUTSIDE HARTLEY'S CREEK CROCODILE farm in Australia's northeastern state of Queensland sits a fiberglass replica of an Australian saltwater crocodile. Its gargantuan body is propped up on sumo-wrestler legs; its mouth contains teeth the size of ice-cream cones. The creature seems more dinosaur than reptile. A nearby plaque notes that the replica is based on an actual croc that once lived in Australia and measured 28 feet 4 inches. The monster croc was shot by Krys Pawlowski, a professional crocodile hunter, in 1957.

As I stood one night on the riverbank near Townsville a couple hundred miles south of the museum watching wildlife biologist Mark Read launch his flat-bottom boat, I was acutely aware that this craft is only about half as long as that record croc. In fact, with its rectangular shape and low gunwales, the boat looked more like a floating breakfast tray than a research vessel. And I wondered if "One-shot Krys," as Pawlowski was

An Australian saltwater crocodile sports up to 68 teeth, most of them replaced often over the animal's many-decades-long life span.

Seven thousand crocs inhabit the 32 acres of mangrove wetlands at Cairns Crocodile Farm, Australia's largest commercial reptile farm.

known, ever harbored such nervous thoughts, or did she just fearlessly face the reptiles like some Spielbergian T-Rex hunter?

What intrigued me even more, enough to climb into the boat, was how Australians have come to live with these horrifying-looking creatures. Of all the many kinds of crocodiles the world over—freshwater and saltwater—Australia's saltwater crocodiles are the largest, and among the most dangerous. Yet through an unorthodox and unconventional approach to animal conservation, Australians have allowed them not just in their national parks and zoos but in their neighborhoods as well. While in most parts of the world man-eating predators forever skirt the thin line between extinction and survival, these so-called salties luxuriate in mud, safety and peak numbers in Australia. To be sure, Australians have not supported these fearsome predators through the kindness of their hearts. Rather, the Aussies have engaged crocodiles in a business proposition of sorts: the salties provide skin and meat for consumer products and bring tourists into the country; in turn, humans, for the most part, let them be.

Read had already told me that no crocodile skeletons that are more than 20 feet long exist in museums, but he also took me through a rigorous safety briefing and had me sign an indemnity form that asked for my next of kin. The double walls of the boat, he pointed out, contained four inches of closed-cell foam. Should a croc bite a chunk out of the boat, Read assured me, we should still be able to make it home. "Unless, of course," he grinned, "the beast took out the outboard end."

It was two hours before midnight when Read started the motor and we planed down the river. Though the night was bright from countless stars and a quarter moon, I sat in a swivel chair at the bow armed with a Big Bertha of a searchlight and pivoted it from one bank to the other, scanning the water.

For several miles the beam picks out only flitting bats and the glitter of airborne mullets, but suddenly it locks onto two eyes, glowing like red-hot coals. "Don't lose him!" Read whispers as he eases the throttle.

The croc floats in minimum exposure mode, only its eyes and nostrils breaking the surface. But as we move in closer, the animal seems to grow, its profile swelling like a surfacing submarine. In crocodilian body language, Read explains later, this is akin to the chest thumping of apes.

Only a few feet away now, we can

Salties don't shy away from long sea voyages—one individual turned up 840 miles from home.

make out the ten-foot body, the serrated rows of large scales that run down the back like parallel mountain ranges. Clearly visible is the lazy S of the tail, a powerful configuration of muscles that form half its body length and can launch its body with lightning speed like an immense coiled spring. For now, though, the croc is perfectly still, except for a slight twitch of its nostrils.

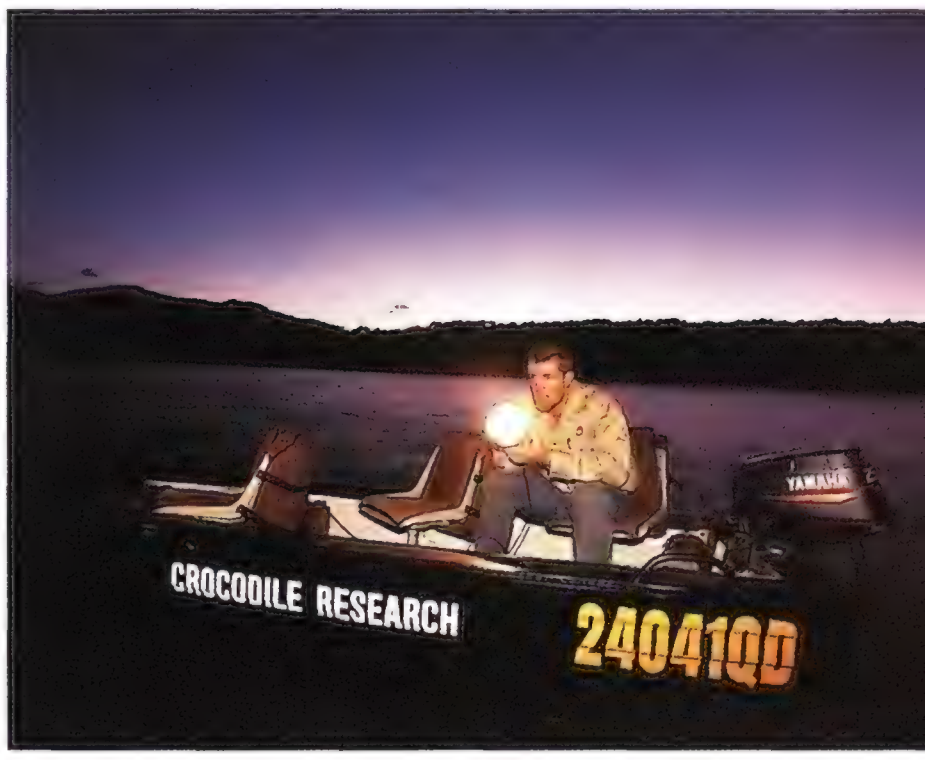
Crocodiles have fine-tuned the art of stillness. They are essentially masters of lethargy. As cold-blooded reptiles, their long lives are preoccupied with conserving energy, mostly by regulating their body temperature. As the sun moves through the sky, they make changes in the position and angle of their bodies to capture its warmth. While an open mouth can signal a warning or challenge, more often than not the "gaping behavior" helps the creature cool its brain.

Crocodiles can slow their hearts down to two to three beats per minute. Perhaps a foot moves, the toes flex, an eye blinks, or the angle of their gaping mouth changes a fraction of an inch, but then there's no movement for an hour or two. Grahame Webb, Australia's preeminent crocodile researcher, has seen crocs who seem to be waiting for an incoming tide to lift them onto a bank rather than going to the trouble of crawling up it themselves. Whenever trouble is near, they simply take deep breaths and sink below the surface. Our croc finally does just that. With a breaststroke pull of its front legs and a slow-motion whip of its tail, it vanishes into the soupy water almost without a ripple, as if it was never there.

When crocs do move, they can strike with remarkable speed and force, lunging and swiping their heads sideways. But their speed and power is short lived and comes at a heavy price. During intense physical activities, crocodiles hold their breath, building up a large oxygen debt; an attack or a short territorial fight can leave them exhausted. Their heart is that of a diver, not a sprinter, and is designed to make the most of the limited amount of oxygen available from a single breath. Because they can't afford prolonged bouts of speed, crocodiles don't chase their prey, but must count on stealth instead.

Biologists recognize three distinct subfamilies of the world's 23 species of crocodilians. "True" crocodiles, which mostly have wedge-shaped heads and pairs of enlarged canine-like teeth that overlap the upper jaws, are widely distributed throughout the subtropics; alligators and caimans, which generally have stubby and shovel-shaped heads are, with the exception of the Chinese alligator, confined to Latin America and the United States; and the gharial, which has a greatly elongated snout, is native to India. Populations of both American and captive Chinese alligators live in the Southeastern United States, along with spectacled caimans and American crocodiles. Although the native gators log some 15,000 nuisance complaints in Florida alone each year, they rarely grow big enough to prey on people. This cannot be said about the Nile crocodile, however, which is common in Africa and kills between 300 and 400 humans a year.

Salties, which are in fact true crocodiles, inhabit most of Southeast Asia, ranging from eastern India to the Solomon Islands, but the tidal swamps and rivers of northern Australia are their greatest stronghold. They are equally at ease in freshwater and seawater: glands at the back of their tongues excrete excess salt from their bodies. Salties make such good use of their efficient tail power that they don't shy away from long, open-sea voyages—one individual turned up on the Eastern Caroline Islands, some 840 miles from home. In Australia, they have been sighted all the way to the Great Barrier Reef, 60 miles out to sea, and Read estimates that about a quarter of the reef's cays and islands have crocodiles on them. And this, in a place that relies on water-based tourism, invariably leads to uneasy interactions with Homo sapiens.



A flashlight beam turns a crocodile's eyes ruby red, making night the best time for wildlife biologists, such as Mark Read (on the Haughton River), to census croc populations.

The day I arrived in Cairns in Queensland, a tourist gateway to both the Wet Tropics and the Great Barrier Reef, a ten-foot-long crocodile was seen cruising along a beach north of town, causing a Jaws-like panic. The resort's mayor thundered that something must be done to keep the beach-

Ron Pawlowski remembers that its three-foot head alone weighed more than 400 pounds.

es open and safe. The numbers of crocodiles were clearly rising, he said. The mandated removal of 50 problem animals each year from Queensland waters just wasn't enough to handle the problem.

But Read begs to differ. As a biologist for the Queensland Parks and Wildlife Service, he is responsible for surveying the crocodile populations along the entire 2,000-mile coast of Queensland and paints an entirely different picture of the problem. "Right now things are a little hot because the crocs are mating," he says. "Smaller individuals get chased out of their home rivers by the dominant animals, and so they turn up in unexpected places. But normally, you'd be lucky to see a crocodile in the wild." Unlike the mayor, he sees no evidence that the crocodile population is rising.

That night, as if to prove his words, we travel another 20 miles through prime croc habitat without seeing another animal. We finally find a shifty 14-footer back at the jetty where we launched the boat three hours earlier. It keeps its distance but submerges before we can get close. Spread out along the bank is a camp of barramundi fishermen, pop-top campers and mosquito-net tents lit with the yellow glow of gas lanterns. A dog barks nearby.

Crocodiles love dogs, Read tells me. To crocs their barking is like the jingle of an ice-cream truck to a child. But what attracts them most of all are the fish scraps discarded by anglers.

"Many crocodile problems are caused by people who throw extra bait or food into the water," Read says. "Crocs are opportunists, always choosing the easiest, laziest option, and for them a boat ramp is a free take-away diner."

While Read is winching the boat out of the water, I'm again drawn to the skulking crocodile, mesmerized by the glow of its red eyes in the night. To the bounty hunters of several decades ago, this was the shine of gold. Krys Pawlowski would be reaching for her rifle.

In the killing frenzy of the 1950s and 1960s, crocodile hunters Krys and Ron Pawlowski shot about 10,000 Australian salties before becoming staunch conservationists.

In a bungalow shaded with eucalyptus trees, an hour's drive west of Cairns, Pawlowski in person offers coffee and cookies while her husband, Ron, shows me a skull of a crocodile with immense teeth, though not the famous 28-footer of yore. I ask about that one. "It was a mistake," says Ron. "We shouldn't have shot it." Once she did and it was dead, the animal was immovable, too big to skin. "We had a passing skipper measure the body before it disappeared with the next high tide," he says. "We were shooting crocs for their skins, not hunting for trophies."

The Pawlowskis got into the business of selling crocodile skins by accident. Late in 1955, they settled in Karumba, a remote outpost on the Gulf of Carpentaria, and built a wilderness camp, where they fished, hunted and grew vegetables while their young children played with sea eagles and pet pythons. Then, one day, their 4-year-old daughter, Barbara, had a dangerous encounter with a ten-foot crocodile. Ron shot the animal, and the skin fetched the equivalent of a week's wage. At that time, in 1956, Ron says there were so many crocodiles in the gulf, they were literally lying on top of each other. Over the next dozen years, the Pawlowskis say they shot and killed some 10,000 crocodiles.

They had plenty of competition. The homecoming of World War II soldiers coincided with the availability of outboard motors and four-wheel-drive vehicles. These events didn't augur well for the crocodilians, and the pursuit of their skins quickly took on the intensity of a gold rush.

As with any boom, it proved short lived. Official figures show that 270,000 saltwater crocodile skins were exported during this period. The Pawlowskis say the total figure of killed crocodiles is much higher because hunters and buyers declared

Sweetheart upturned boats and left bullet-hole-size tooth marks in aluminum hulls.

only a fraction of their catches to avoid taxes. Many a wounded croc sank to the bottom and died unclaimed. Not surprisingly, large reptiles were rapidly disappearing from the billabongs, rivers and swamps of northern Australia.

In 1972, in response to increasing public pressure by people concerned about the dwindling population of crocodiles, the Australian government declared a total ban on the export of crocodile products. At its nadir, salties were thought to number between 5,000 and 10,000 individuals. But once protected, crocodiles quickly rebounded. First they increased in numbers, then in size. The crocodiles resumed their historic role as Australia's ultimate predators. Many grew bolder and less wary of people. Then they began attacking them.

The chronicles of human confrontations with crocodiles in Australian newspapers read like true crime novels, where reptilian rogues and villains terrorize unsuspecting and innocent citizens, while various reporters try to fathom the psychology of the cold-blooded killers. The simple truth is that crocodiles will hunt anything smaller than themselves, including not only their own kin but humans as well.

"Crocodiles are fiercely territorial animals, with elaborate hierarchy and display behavior," Mark Read told me. "From their perspective, a profile of a swimming person, or even a boat, looks just like another crocodile. So they swim about, arching their head and tail in an attempt to make themselves look bigger. When all that fails to drive the perceived competition away, they attack."

A telling example is the story of Sweetheart, a 17-foot male crocodile who inhabited a deep Finniss River billabong 50 miles south of Darwin and had become Australia's most notorious predator. Around 1974 Sweetheart developed a profound dislike for the sound of outboard motors on small boats. He rammed them from underneath, tore off their outboards and left bullet-hole-size tooth marks in aluminum hulls. Sweetheart upturned boats or shook them so hard that occupants were thrown into the water, sending them panic-stricken for the shore. Oddly, Sweetheart never attacked a human, though during 15 or so recorded incidents, he had plenty of opportunities.

The 17-foot-long, 1,700-pound crocodile known as Sweetheart attacked more than 15 boats in Australia's Northern Territory before wildlife rangers snared him in 1979.

His reign of terror lasted five years, by which time Sweetheart had attained a celebrity status rivaling that of the Loch Ness monster, skillfully evading all attempts at capture and dunking a policeman and wildlife ranger sent out to shoot him. Eventually, Sweetheart succumbed to a snare baited with a dingo (wild dog) carcass. The croc is now a chief attraction at the Darwin Museum.

Since 1876, there have been some 60 crocodile attacks on humans in Australia, including 27 fatal encounters, though many more have likely gone unreported. In contrast, road accidents kill about 1,700 Australians each year. Statistics show that the majority of crocodile encounters involve people who knowingly swim in infested waters, often at night and frequently after having had something to drink.

Crocodile expert Grahame Webb has been attacked twice—once by a female defending her nest, and a second time by a crocodile that leaped out of the water and tried to pull him out of a tree where he was following its movements with a radio-tracking device. Webb says that a croc bite feels like being hit with a hammer. Only later comes the realization that the teeth have penetrated. A croc's jaws operate with the power of a hydraulic press: the closing snap of a crocodile's mouth carries the sound of finality, like the metallic slide of a guillotine. An adult can crush a pig's skull just by flexing its jaw muscles and can crunch into a turtle the way we might bite into an apple.

As the crocodile population recov-

ered in the late 1970s and individuals began regularly attacking humans, sympathy for the reptiles rapidly wore thin. Webb, who was a consultant for the government of the Northern Territory, mounted a wide public awareness campaign designed to make people appreciate the crocodile's value to the Australian economy. "We had to change the popular image of a crocodile from a nuisance to a community asset," he says. He promoted crocodile farming through vigorous lobbying of politicians and frequent appearances in the media. When asked on the radio about how many crocodiles he would like to see in the wild, he responded, "You tell me how much money you want in the bank." His efforts proved so successful that Australia amended its ban on exports of crocodile meat and skins in 1976. In 1985, the Convention on International Trade in Endangered Species of Wild Fauna and Flora downgraded the Australian saltwater crocodile from Appendix 1 to Appendix 2, meaning that crocodile farmers could now export crocodile skin and meat derived from eggs harvested from the wild, not just those from farms. Private landowners were paid $5 or more for wild croc eggs. All of a sudden there was financial incentive for protecting crocodiles on private land. Crocodiles, in turn, fed a burgeoning tourism industry, as travelers descended on Australia by the planeload for their very own Crocodile Dundee experience. Today, Australia's 16 crocodile farms legally export more than $2 million worth of meat and skin a year.

Webb is now the director of Wildlife Management International, which operates Crocodylus Park on Darwin's outskirts, a center that is part research and educational facility and part minizoo. A shop sells crocodile products ranging from ritzy handbags and laptop computer briefcases to an

In exchange for hunks of meat, salties routinely display their remarkable leaping prowess for tourists on popular hour-and-a-half cruises on the Adelaide River near Darwin.

All of a sudden there was financial incentive for protecting crocodiles on private land.

assortment of souvenirs: mounted croc eggs, feet and heads, bottle openers and tooth necklaces, stuffed hatchlings, even a back scratcher made from a croc foot on a stick. An inviting, small museum includes a section on man-eating legends, such as Whiteback, who may have been responsible for as many as 14 fatalities along the Lupar River on the island of Borneo.

The idea of commercially harvesting crocodiles hasn't earned Webb many friends among conservationists. But he has achieved his goal: the crocodile population in Australia's Northern Territory has reached a stable high, rebounding from 3,000 to 80,000 in the past three decades. He sees Australia's peaceful coexistence with crocodiles as a model for man's interaction with dangerous predators the world over. "It's easy to protect the wildlife in national parks," he says, "but that's only 5 percent of the world's land. What about the other 95 percent? The only way to guarantee the animals' safety is to make their presence financially attractive to all of those who own croc habitat."

Indeed, across the Northern Territory, there is now little difference between crocodile populations inside and outside national parks. This presents park rangers such as Tom Nichols with a sticky kind of challenge: how to implement Webb's utopian vision on the ground.

Nichols patrols the zone separating mangroves and suburbs. On one hot afternoon, I joined him as he guided his boat along a croc trapline on the perimeter of Darwin's harbor. Each trap is a cage with its own trip-wire door, mounted on a floating pontoon and baited with a dead chicken. Over the past four years, Nichols has caught more than 500 crocodiles here.

"We have identified the prime croc real estate and we removed the animals that were there," Nichols told me. "Such a vacuum in the habitat attracts new arrivals, and we continually take them out too." Like weeding, he added, it's a never-ending job, but one that significantly minimizes the number of human-croc interactions.

True enough, on this particular occasion, the interaction was nonexistent. We didn't find a single animal. It was only back at the hotel that a newspaper headline caught my eye. On the Kimberly coast, in Western Australia, a crocodile had leaped out of the water and grabbed a 34-year-old fisherman, Norman Stanley, from his boat. Stanley was bitten on the neck and shoulder. He was treated in the local hospital and survived. He hadn't even realized that a large crocodile was lurking near his boat.

That same unseen presence also provided the suspense in the crocodile show I saw a few days later at the Australia Zoo, north of Brisbane. Around a double-fenced enclosure containing a pond of café au lait-like water, some 400 people gathered to watch Steve "the Crocodile Hunter" Irwin tease an invisible submerged one-ton croc named Acco.

Sporting his signature khaki shorts, Irwin dangled a long strip of meat near the water's edge. Suddenly, out of the mirror-still pond, Acco exploded like a punch, seizing the bait with a gunshot clap of its jaws. Irwin, who knows the striking range right down to an inch, was outside the danger zone, but the crowd gasped as Acco, having gulped the meat, slid back out of sight.

Irwin was demonstrating how crocodiles hunt, watch their prey, approach with the stealth of a submarine, then strike with lightning speed. "But they can only attack if you are on their territory—in the water, or within a half of their body's length from the water's edge," he explained. "Stay outside of that zone and you are A-B-S-O-L-U-T-E-L-Y safe, even if the river is full of crocodiles."

Irwin knew that the wet season was coming and that monsoonal storms were already rolling in from the Arafura Sea, bringing with them oppressively humid air. He knows, too, that the tourists who had come to see him perform at the Australian Zoo might well find themselves, dazed by heat and humidity in the not-too-distant future, longing for a cooling dip in a river. Perhaps, as they trespass into crocodile territory, they will remember what he had to say that day.

Writer Derek Grzelewski and photographer Mark S. Wexler last worked together for Smithsonian *on camel trekking in Australia.*

JEROME COOKSON

Very Verdi

ONE HUNDRED YEARS AFTER THE MAESTRO'S DEATH, THE ITALIAN COMPOSER REIGNS, VERY OPERATICALLY, IN THE HEARTS OF MUSIC LOVERS EVERYWHERE

BY JOSEPH HARRISS

Bearing candles in homage to Verdi (depicted at the podium in 1879), an audience awaits the first act of *Nabucco* in Verona last summer. The performance drew 12,000 spectators to the city's first-century A.D. amphitheater.

NEW YORK'S METROPOLITAN OPERA opened its new season in September with a performance of acts from three operas by Giuseppe Verdi—an American tribute coinciding with the international observance of the 100th anniversary of the Italian maestro's death. Opera lovers also thronged to free Verdi concerts this summer in Central Park, where the New York Grand Opera concluded its ambitious program of performing all 28 of Verdi's operas over the past eight years. "Verdi means *everything*," Met General Manager Joseph Volpe told the Metropolitan Opera Guild at its annual convocation in April. "The Metropolitan Opera would be a radically different institution were it not for the works of this staggering genius." In fact,

one out of five Met performances are Verdi works. "No other composer even comes close," Volpe added.

Nor was New York alone. In Shanghai, a lavish version of *Aida*, staged in a sports stadium, featured a 100-foot pyramid that morphed into a giant sphinx, a cast of 3,000, including 1,000 spear-carrying soldiers, and a menagerie of elephants, camels, lions and tigers as well.

And in Verdi's Italy, where he is honored as much for helping to unify and liberate the country as he is for his music, President Carlo Ciampi officially inaugurated the centenary celebrations by attending a performance of the composer's powerful *Requiem Mass*, celebrated at the 700-year-old cathedral in Parma, capital of the province where Verdi was born. In Milan at La Scala, where Verdi reigned supreme, the legendary opera house dedicated its season to Verdi, mounting productions of 11 of his works. "Italy without Verdi," observed Italian Minister of Culture Giovanna Melandri, "would be like England without Shakespeare."

Probably the most popular composer in the history of opera, Verdi's melodies are sung, hummed and whistled—even by those who are operatically challenged, unaware that the lilting tune in their heads is from *Rigoletto* or the rousing march they can't forget is from *Aida*. *La Traviata* may be the world's most performed opera. One musicologist, so the story goes, has calculated that at least one live performance of it has taken place somewhere in the world every single day for the past 100 years. (Singular acclaim, though, must be accorded to New York's maestro Vincent La Selva, whose productions in Central Park made him the only individual to have conducted all 28 Verdi operas in order, in a series of staged performances. That achievement, begun in 1994 and concluded this summer, earned him a place in the *Guinness Book of World Records*.) And Verdi's music has found its way to the silver screen for decades, from nods to *Il Trovatore* in the Marx Brothers' *A Night at the Opera* and *Babe: Pig in the City* to the strains of *La Traviata* in *Pretty Woman*.

The composer's first wife, Margherita Barezzi, died at age 27 of rheumatic fever.

Verdi found a soul mate in Giuseppina Strepponi, whom he married in 1859.

This shy, complex genius, who liked to call himself simply a "peasant," knew a great deal about hypocrisy, suffering and the ways of the world. When he composed *La Traviata*, the tale of a courtesan scorned by society, Verdi himself was living with a "fallen woman." He and his mistress, snubbed by villagers where the couple had settled, were no strangers to petty opprobrium.

Italy was torn by strife for much of his life. After the Congress of Vienna's reconfiguration of Europe upon Napoléon's defeat in 1815, foreign troops occupied Verdi's beloved country. And while still in his 20s, he bore crushing personal tragedies.

Not the least of the ironies surrounding Verdi is that Italy's operatic icon was born French, in the village of Le Roncole, on October 10, 1813. Carlo Verdi had the birth of his son, Giuseppe Fortunino Francesco, recorded in the nearby market town of Busseto, 20 miles from Parma. Because northern Italy was then occupied by Napoléon's forces, the authorities duly noted the Christian names of this new French citizen as Joseph Fortunin François.

Carlo owned the village grocery-*cum*-tavern where locals dropped in for a glass of the region's bubbly Lambrusco wine. As a child, his son, thin and painfully shy, helped with the chores but rarely joined in play with other youngsters. Clearly, Verdi was precociously intelligent; by the age of 3, he studied Latin and Italian with a local schoolmaster, Pietro Baistrocchi, who was also the church organist.

Music captivated him. Verdi's parents bought a spinet for the budding prodigy when he was 8. With the benefit of lessons from Baistrocchi, he was playing the church organ by age 10; parishioners dubbed him *maestrino*, little master. Soon, Busseto's cathedral organist, Ferdinando Provesi, was instructing the boy in several instruments, as well as harmony and counterpoint theory. (Verdi also walked the three miles back to his village on Sundays to play the organ.) At one point during this period, Verdi had a chance to fill in as the organist at the cathedral in Busseto. Impressed, a priest asked whose music he had played. "My own, Signor Mae-

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stro," the blushing boy admitted. "I played it as it came to me."

That sort of virtuosity caught the eye of Antonio Barezzi, a Busseto merchant and music lover who had founded a small philharmonic society. He invited Verdi to compose pieces for the group, as well as give music lessons to his daughter, Margherita. At 18, Verdi applied for entry to Milan's music conservatory, the best in Italy. But after playing piano and creating a four-part fugue for the entrance exam, he was turned down. The examiners opined that the aspiring musician held his hands "incorrectly" at the piano, was already too old to become a great pianist and was a foreigner into the bargain. (The country was so divided that passports were required to travel from Parma to Milan.) "He will turn out to be a mediocrity," the conservatory's assistant head predicted. Verdi, who was good at holding a grudge, never forgot the rejection. Years later, when he was famous, the conservatory asked his permission to rename their institution after him. He turned the request down. "They wouldn't have me young," he said. "They cannot have me old."

Barezzi told Verdi to stay in Milan at Barezzi's expense, enabling Verdi to study privately with one of the best music professionals in the city. Verdi worked up to 14 hours a day, mastering the intricacies of fugues and counterpoint and composing. He did return to Busseto long enough to marry Margherita in 1836. They quickly had a daughter and a son, whom the couple doted on. A few years later, in 1839, Verdi's opera *Oberto, conte di San Bonifacio* premiered at La Scala, which offered him a contract to produce three more operas.

Almost before he could begin work, tragedy struck. The two children, in quick succession, died of childhood diseases. Then, in June 1840, Margherita herself succumbed to rheumatic fever. Verdi was only 27 years old. Felled by grief, he tried to continue working and managed somehow to produce another opera. *Un giorno di regno* opened in September 1840 and flopped spectacularly.

Even as an international celebrity, Verdi (in Paris, 1850s) regarded time away from his country estate as exile. "I have," he wrote, "a ferocious desire to return to my house."

The story of Giuseppe Verdi, composer, could have ended there, had it not been for the perseverance of Bartolomeo Merelli, impresario extraordinaire of La Scala. He intended to hold Verdi to his contract and asked him to read a new libretto, *Nabucodonosor*, that dealt with the fall of Jerusalem in 587 B.C. and Jewish captivity in Babylon. Verdi, despondent and unable to work, refused. Running into the composer on the street, Merelli thrust the manuscript into his hands. Dismissively, Verdi tossed it on a table in his room; the pages fell open to the words of a chorus, "Va, pensiero, sull'ali dorate" ("Go, thought, on golden wings"). The story of a people, who, like the Italians themselves, yearned for freedom, fascinated Verdi; he read the manuscript three times that night. He began slowly to set the libretto to the music that would evolve into *Nabucco*.

The premiere of that opera, in March 1842, became one of the high points of theatrical history. For ten

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Austria's Bregenz Festival, on Lake Constance, is known for inventive productions: the floating set for *A Masked Ball*, 1999-2000 season, depicts Death perusing the Book of Life.

Aida (here in rehearsal in Spain in 2001) has taken on yet another incarnation in the current Broadway adaptation from composer Elton John and librettist Tim Rice.

minutes, the audience applauded the opening scene, in which a rousing aria reminds the oppressed Israelites that God will always come to their aid. It was a scene guaranteed to nettle the Austrian authorities. (The treaty of Vienna had apportioned Italy among various nation-states; Austria's stake included Milan.) Verdi's coded message, calling for the oppressed to throw off their tyrants, came across like a clarion call. Next morning, he woke up to find himself famous: Italian patriots had acquired their anthem.

Verdi would later characterize the next few years as his "galley slave" period, for all the work he put into them, writing some 14 operas to sate public demand. Not all his creations were great, and he knew it; he was making a living. Later, Verdi couldn't bear listening to some of his early successes. On vacation at the spa of Montecatini in his later years, he paid the local organ-grinders to avoid his hotel when playing the inevitable "La donna è mobile" aria from *Rigoletto*.

But the galley interlude brought Verdi not only success and money, but his second great love. Giuseppina Strepponi had studied at the Milan Conservatory; when she took a part in *Nabucco* in 1842, she was a celebrated diva. She was also a woman with a past, having borne three children outside wedlock. Pushing her voice too hard, she was burned out artistically by age 31 and retired to Paris to give singing lessons. By 1848, when Verdi turned up in the city to produce commissions for the Paris Opéra, the two began living together. He returned to Busseto the next year, La Strepponi on his arm. The scandal, in a mid-19th-century Italian village, erupted with predictable venom.

Virtuous citizens snubbed, ignored and humiliated Giuseppina when she went shopping or to church. It was not a pretty situation, but Giuseppina, a strong and wise woman whose letters demonstrated her good judgment and sense of humor, obviously loved Verdi devotedly. Warned by him that her arrival in Busseto might be discomfiting, she answered, "Everything will be just fine for me so long as you are there, you ugly, wretched monster! Good-bye, I barely have time to tell you that I detest you and I embrace you." For reasons still unclear, more than a decade would elapse before they married.

In any case, the relationship fueled Verdi's creative energies. Beginning in 1851, he produced three stellar hits, *Rigoletto*, *La Traviata* and *Il Trovatore*—known as the Verdi Trilogy—in only two years.

Traviata and *Trovatore* got by the eagle-eyed Austrian censors relatively easily. But *Rigoletto*, from Victor Hugo's anti-Royalist story of a hunchback court jester whose beloved

REUTERS NEWSMEDIA INC/CORBIS; ESTEBAN COBO/AGENCE FRANCE-PRESSE

daughter is taken advantage of by the king, offended the Austrian military governor, who called the libretto "a repugnant [example of] immorality and obscene triviality." Censors naturally objected vehemently to the portrayal of a monarch as a lecher and debauchee. After a series of disputes, both sides made token gestures, and the opera went on to delight audiences to this day.

Censors understood all too well that the unabashedly patriotic arias in many of his works inflamed revolutionary sentiment. After the incendiary *Nabucco* won acclaim, Milanese sitting in cafés would softly sing or hum the strains of "Va, pensiero" when an Austrian officer walked by. And in *Atilla*, a Roman citizen faces down the dreaded Hun, proclaiming "You take the universe, leave Italy to me!" Audiences invariably leaped from their seats, shouting "Italy for us!" Even the composer's name became synonymous with patriotism, as graffiti-prone dissidents began scrawling "Viva VERDI" on walls. Unknown to most of the occupying forces, the double meaning was an acronym calling for Victor Emmanuel II, king of Piedmont, to head a free Italy: Vittorio Emanuele Re d'Italia.

Milan was in fact liberated, at least briefly, in 1848. The revolt erupted spontaneously when a crowd gathered before the governor's palace. Rioters built barricades in streets and housewives poured boiling water on Austrian troops. Verdi, who happened to be in Paris at the time, declared himself "drunk with joy." "There is and should be," he wrote to a friend, "only one kind of music to please the ears of the Italians of 1848—the music of guns." But to Verdi's disappointment, the Austrians soon quelled the uprising. Foreign domination, plus quarrels among Italy's strongly divided regions, kept the country from unifying for another 13 years.

In another centenary celebration held on Italian soil, this production of *Il Trovatore*, conducted by Zubin Mehta, opened in May in Florence.

When Italy at last held its first free elections, in 1861, Prime Minister Cavour asked Verdi to stand for election to Parliament. An ardent patriot but reluctant politician, the composer replied that he was a musician and farmer. Cavour insisted that compliance was a sacred duty.

Even though he declined to campaign personally, Verdi won the right to represent Busseto and began attending the parliamentary sessions in Turin. But after only a few months, Cavour died. No longer compelled by personal loyalty, Verdi went back to composing operas. When an idea came on, it came on strong, as a complete work. He rarely used a piano to create. "My difficulty," Verdi once explained, "is to write down the musical thought quickly enough to capture it in its totality just as it comes into my mind."

The inspiration for *Aida*, wildly successful from the start, came from an unexpected source: it was commissioned by the Khedive of Egypt. Set in Memphis and Thebes in the time of the pharaohs, the opera tells the—entirely fictional—story of the doomed love between an Ethiopian slave, Aida, and the captain of the king's guards, Radames. It premiered at the new Cairo opera house in 1871 to great acclaim.

Verdi didn't produce another opera for 16 years after that. He was enjoying life on his country estate and taking trips to Paris and Genoa; he stayed in touch with the music world by working to improve opera houses and writing *Requiem* and other pieces. At last, in 1887, he premiered *Otello* and, in 1893, *Falstaff*. Both operas were based on Shakespeare, whose works Verdi had read and loved since his youth.

No matter where his work took him, the one constant in Verdi's existence was his devotion to the country life. When he was in his mid-30s, he had purchased a manor house at Sant' Agata, near Busseto, where his ancestors had lived for more than 200 years. He liked nothing better than working with his tenant farmers planting and harvesting crops—he was one of the biggest landowners in northern Italy—and remodeling the two-story, mustard-yellow Villa Verdi, staffed by ten domestics and 14 gardeners. (Verdi's retreat, still in existence, is open to the public.)

This preserve, virtually a full-scale botanical garden, boasts a large pond, more than 100 kinds of trees, a thatch-roofed gazebo and a gloomy grotto full of cobwebs and bats. On clear days, Verdi could see across the flat Po River plain, with its lines of

GIAN LUCA MOGGI/AGENCE FRANCE-PRESSE

The composer (in the 1890s) regarded the grounds of his villa, where he planted a new tree whenever he completed an opera, as one of his greatest compositions.

tall poplars, the Apennines rising on one side, the Alps on the other.

But Giuseppina was bored in the country. She called Sant' Agata "the Vale of Yawns, if not of Tears" and pronounced herself to be isolated "in the middle of all these cretins." Nevertheless, she took good care of the maestro, noting that "Not everybody can write *Aida*, but somebody has to pack and unpack the trunks." Preparing for a journey to St. Petersburg, where Verdi was to supervise preparations for *La forza del destino*, she ordered up plenty of pasta, cheese and salami, with 120 bottles of Bordeaux and 20 of champagne. "The pasta will have to be cooked properly to keep him in a good humor," she noted. "And I plan to let him be right in everything." Usually the first to hear newly composed melodies, she was one of her husband's most influential critics. Her role in Verdi's work, as she described it, was to stay "curled up in an armchair, [saying] 'That's beautiful . . . that's not . . . Repeat that, it's really original.'"

As his friends died off, along with men he had admired such as Giuseppe Garibaldi and Victor Hugo, Verdi grew melancholy. "Now the years are beginning to pile up," he wrote. "What are we doing? What have we done?. . . Nothing." In his 80s, he played Beethoven sonatas for amusement and led the rare visitors on a tour of Villa Verdi. "The Maestro cut a majestic figure," noted one observer who saw him at 87. "Serene and solemn with his white hair, his white beard; a biblical figure, grand, an apparition from a dream."

Visiting Milan in January 1901, the 87-year-old Verdi suffered a stroke in his room at the Grand Hotel and remained unconscious for six days. The city council required straw mats to be placed in the street beneath his window, thereby muffling the sound of horses' hooves and carriage wheels. Tram conductors were ordered not to ring their bells as they passed by. From a press office improvised on the hotel's ground floor, hourly bulletins on Verdi's status went out to the King of Italy, as well as to the world's newspapers. When the composer died at 2:50 P.M. on January 27, the Grand's outside lights turned off. At dawn, the city's flags were draped with black ribbons. For three days, shops were shuttered and theaters and music halls closed in his honor.

In his will, Verdi left orders for an "extremely modest" funeral, specifying "two priests, two candles, and one cross." There was to be no music, but some 200,000 mourners lining the streets spontaneously broke into "Va, pensiero," the *Nabucco* aria that had marked his rise to fame and fueled Italy's fight for freedom. A government official eulogized him as "our great unifier, when the wave of his passionate music, something that the enemy could not seize, embodied the idea of our nation, which swept freely from the Alps to the sea, setting our hearts on fire." His music in fact was universal, extending far beyond the Italian peninsula. As the poet Gabriele d'Annunzio put it, "He loved and wept for all men."

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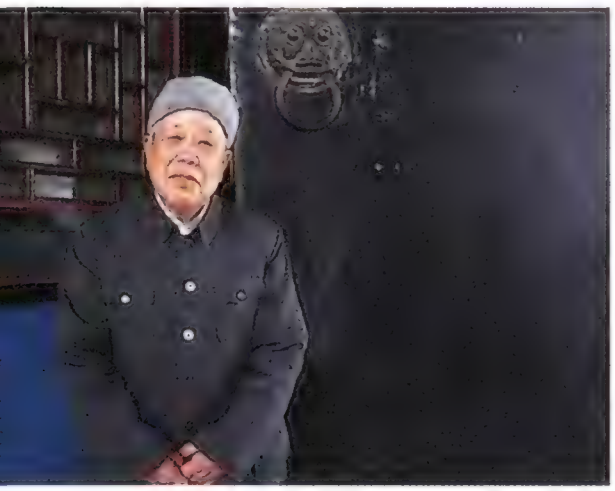
In a remote corner of eastern China, travelers tread the path of the ancient sage

The Way of Confucius

BY FERGUS M. BORDEWICH ◆ PHOTOGRAPHS BY JEFFREY AARONSON

The village of the Master's Cave is the site of the cavern where, legend has it, Confucius was born in 551 B.C. An eagle, according to local lore, swooped down to fan the infant with its wings.



Although rarely visited by foreigners, the modern city of Qufu draws throngs of Chinese tourists, who come to see the temple complex of Confucius. One of his descendants, Kong Fanyin (above), has overseen the family mansion since the Communist takeover in the 1940s.

AS COMMUNIST TROOPS FOUGHT THEIR WAY ACROSS THE FLAT WHEAT FIELDS of the Shandong plain toward the small city of Qufu, in September 1947, Kong Decheng, the 77th direct descendant of Confucius, hurried through the massive black doors of the clan's ancestral mansion and into a waiting automobile that would carry him to safety, and toward eventual exile in Taiwan. He was abandoning forever the sacred city in which the Kongs had dwelled continuously for almost 25 centuries.

To Chinese of ages past, there was no place in all of the Middle Kingdom more revered than Qufu (pronounced Chu-fu), permeated as it was said to be by the spirit of China's greatest philosopher and the moral godfather of Chinese civilization, Kong Chungni, or "Confucius," a latinization of the honorific title Kong Fuzi, or "Revered Master Kong." Born near Qufu in 551 B.C., he served briefly as a functionary in service to the duke who was overlord of Lu, as the surrounding area was then known. After traveling the countryside for a decade, espousing his values, Confucius finally retired to a simple cottage in Qufu. There, in the shade of an apricot tree, he taught his philosophy to an ever-growing following of disciples in what was, in effect, China's first school of government. A year after his death in 479 B.C., the sage's cottage was converted into a temple in his honor. In time, his teachings percolated throughout China until, in the Han dynasty (202 B.C.–A.D. 220), they became the core of the empire's official ideology. Meanwhile, honors and titles were heaped upon his descendants, who were sheltered by imperial protection from all the chaos and political vicissitudes of China's tumultuous history.

The temple complex continued to grow until, by modern times, it encompassed 49 acres in the heart of Qufu. Next to it, the Kong family mansion expanded. In Qufu, even the commonest people were said to walk with more

Wandering the town's doglegged lanes, I felt as if I had fallen through a rabbit hole into a lost corner of Old China.

dignity, speak more truthfully, behave with more graciousness than anywhere else in China. Western travelers found the city enchanting. George Kates, an American aesthete who lived in China in the 1930s, called it a "tender" place, a welcome change from the "gaudy formalities of the capital," pervaded by "a silence stimulating to the mind, charging it with humane reflection."

After the Communist revolution of 1949, Confucius was made to symbolize all that seemed worst in Old China: sclerotic bureaucracy, slavish devotion to ancestors, mindless resistance to change. During the Cultural Revolution of 1966-1976, Confucianism was relentlessly denounced as a catchall for every form of thought that deviated from radical Maoism. Red Guards sacked the great temple, dragging an enormous statue of Confucius through the streets and smashing it with sledgehammers in the center of town. They were only barely prevented from destroying the mansion itself. Disdained by the official state ideology, ignored by the masses of Chinese, and far from the few cities that foreigners were permitted to visit, Qufu virtually disappeared from China's, and the world's, cultural map.

I discovered it almost by chance nearly 20 years ago when I was serving in Beijing as an adviser to the Chinese national news agency. Having heard from a colleague that relics of the sage had survived to the present day, I obtained permission to travel there from the Public Security Bureau, China's version of the KGB. Then, as now, Qufu suggested the muted palette of a Chinese ink-wash painting: gray walls and gray-tiled roofs of low, centuries-old houses set against a flat gray sky, a minimalist composition brought alive here and there by a sudden splash of vivid pink where peach trees had burst into bloom. I was astonished to find the temple and the mansion largely intact, except for the statues and ancestral tablets of the Kongs destroyed by the Red Guards. Wandering the town's ancient doglegged lanes and the mansion's labyrinthine passageways, and sitting for hours in the vast temple compound, entranced by its majestic symmetries and limpid solitude, I felt as if I had fallen through a rabbit hole into a lost corner of Old China. That feeling was only intensified by my accommodation in the only quarters then available for foreigners—a wing of the Kong mansion itself. My room looked onto a secluded courtyard framed by ornamental bamboo and leading into musty pavilions filled with antique scrolls, century-old porcelain and other ornaments of the old order. I left Qufu only with reluctance, vowing to return. Recently, I did.

Artist-entrepreneurs (like this sculptor with a figure of Confucius) sell their works to research institutes, schools or company headquarters within China. After the revolution, says one of the sage's descendants, "I felt Confucius slip away. Now I feel him coming alive again."

Having reawakened after its decades-long sleep under orthodox Communism, Qufu is a far livelier place than I remembered. In the center of town, the operators of independent street-side eateries loudly compete to sell braised eels and crayfish, bowls of snails and chili peppers, roast duck, fried dumplings, and pineapple on a stick. Karaoke squawks from cafés the way hortatory propaganda once droned from loudspeakers. On the outskirts, new construction is replacing open fields with Singapore-style office buildings and apartment towers. But, fortunately, construction in the center of Qufu has been kept low and unobtrusive, in harmony with the scale of the great temple.

Just beyond the massive gate that leads to the first courtyard and its engulf-

At the center of Qufu stands the majestic temple dedicated to Confucius, a superb example of classical architecture. An early 20th-century traveler noted its "magnificent sweep of lines, with eaves curving up toward the stars."

ing quietude, lofty cypress trees (symbols of the unbending rectitude that was the ideal of Confucian character) perfume the air with their musky scent. As courtyard after courtyard unfolds, each reveals some majestic vestige of the imperial past. In one, rows of tall marble stelae, or commemorative tablets, record the visits of bygone dignitaries. "The home of Confucius is like a golden city," writes a prime minister of the Ming dynasty (1368-1644). "We came here with a gentle breeze, and the members of the Kong family welcomed us with silk and incense. . . . " Another stela proclaims: "Confucius is like food and clothes: Without him China never can prosper."

In the innermost courtyard, above marble columns incised with swarming dragons, the double yellow-and-green tiled roofs of the central sanctum soar against the sky like pinions of enormous birds. Twenty years ago I had the entire temple virtually to myself. Now Chinese visitors crowd before a restored statue of the sage, many of them burning incense as a sign of respect, a sight unimaginable just a few years ago.

Below the marble platform that supports the sanctum, there is an open, tile-roofed platform that stands, it is said, on the very site of the apricot tree where Confucius engaged his students in dialogues. These have come down to us as a sprawling work that takes up about a hundred pages in English translation. The *Analects*—meaning discourses—are a compilation of maxims, anecdotes, fragments of dialogue and pronouncements recalled by disciples and recorded just decades after the sage's death. Not surprisingly, since nothing survives that the master himself wrote down, many of his sayings come across as opaque. For instance, what on earth is meant by: "When the villagers were exorcizing

evil spirits, he stood in his court robes on the eastern steps"? For the most part, however, the voice of the *Analects* is tolerant, compassionate and plainspoken. "Do not impose on others what you yourself do not desire."

Confucius lived in an age of disorder when tiny dukedoms were divided into armed camps often at war with each other and among themselves. Most people lived in want and were oppressed by bad government. In this forlorn climate, Confucius espoused the revolutionary idea that the purpose of government was to make people happy, and that leaders should rule by moral example rather than force. He believed they could do so only when government was administered by the best-educated people in the country. To that end, he accepted students from every social stratum, declaring, "I have never refused to teach anyone, even though he came to me on foot, with nothing more to offer as tuition than a package of dried meat."

In an era of ruthless despotism, he urged men to think for themselves. (Women apparently never came into his thinking at all.) More than anything, he emphasized that every man had a duty to stand up for what he knew was right, no matter the consequences. "If I feel in my heart that I am wrong, I must stand in fear even though my opponent is the least formidable of men," he told his disciples. "But if my own heart tells me that I am right, I shall go forward even against thousands and tens of thousands." In a famous encounter, when a corrupt local lord asked Confucius how to deal with widespread thievery, the sage replied, "If only you were not avaricious yourself, they would not steal even if you paid them to."

Although Confucius placed a heavy emphasis on devotion to parents and by extension, to one's social superiors, his democratic leanings ultimately gave autocrats cause for alarm. During China's first cultural revolution, in the third century B.C., the emperor, Qinshihuangdi, savagely attacked Confucius' ideas and those of all other philosophers as "subversive," and ordered all copies of their teachings to be burned. Anyone who dared cite the Confucian classics in order to criticize the government was to be executed. (Because the Confucian texts were, as legend has it, hidden inside a temple wall, they survived.)

Eventually, of course, China's rulers perceived the benefits of attracting loyal and competent administrators trained according to Confucian principles, and in time, the system produced the world's first professional civil service. It also became a government lavishly praised, if idealized, by Enlightenment thinkers, including Voltaire. The 18th-century German mathematician and Confucian scholar Gottfried Leibniz even argued that China ought "to send missionaries to us to teach us the purpose and use of natural theology, in the same way as we send missionaries to instruct them in revealed theology."

Almost nothing is documented about Confucius' early years, except that he was orphaned very young and was poor and devoted to learning. In the *Analects* he sometimes sounds insufferably fussy: "He did not sit, unless his mat was straight." Usually, however, he comes across more warmly, if a bit compulsive. He once described himself as "the sort of man who forgets to eat when he tries to solve a problem that has been driving him to distraction, who is so full of joy that he forgets his worries and who does not notice the onset of old age." He may, of course, have been exaggerating.

One day, accompanied by an interpreter, I drove out to the place, about 15 miles from Qufu, where the sage was born. We passed ambling horse carts, shepherds

In addition to having inspired architectural treasures, the reverence for Confucius (in a 19th-century stone rubbing) also resulted in a literary legacy. The master's *Analects*, or sayings, are noted for brevity and punch: "Give your parents no other cause for anxiety, than illness."

The flat countryside around Qufu (where this farmer pedals his cart, near Confucius' birthplace) has changed little in 2,500 years. Increasingly, as the appeal of Communism fades, the Chinese look to Confucianism for moral guidance.

tending flocks of goats and sheep, and densely packed mud-brick villages. Gradually, the population thinned, the land grew bare, and we climbed into a range of low hills to a small Ming temple. Red-walled and solitary, the sanctuary stood like a sentinel at the crest, looking out over the stony valley where Confucius spent his earliest years. From the temple, we followed a footpath through a forest of pine trees and cedars to the Master's Cave Village, a hamlet of fieldstone cottages that clung, somewhat precariously, to the steep slope. A young man carrying an infant in his arms shyly approached us, saying that he had never had the privilege of entertaining a foreigner, and invited us into his home. Seated around his motorcycle, lovingly polished, which occupied pride of place in the small living area, he served mugs of pale green tea and fistfuls of peanuts, the village's chief crop. When I asked about Confucius, the young man blushed and replied that he'd never read him.

On the way back to the Ming temple, we stopped to talk with a grizzled old man, wearing a black padded jacket, who was cooking a meal of gruel over an

A young man, saying he had never had the privilege of entertaining a foreigner, invited us into his home.

earthen stove fired by dried cornstalks. When I asked him about Confucius, he scratched his chin and recounted a story that is as old as any in China. "Kong Fuzi was born right over there, just across the river," he said. "But the baby was so ugly that his parents threw him away. So a tiger came and suckled him in that cave, down there below the village." With his chin, he indicated a shallow cave nearby, which had given the village its name. "I don't know exactly what happened after that, except that he became Master Kong."

If the sage's origins barely transcend primitive myth, his grave, at least, has been a landmark since his death. It lies in an extraordinary walled forest known as the Kong Lin, just outside Qufu, where Kongs have been buried since the fifth century B.C. In a country where ancestor worship lies at the core of both

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The weight of the silent, gathered generations is overwhelming, like a tidal force of time itself.

private and public ritual, the Kong Lin was a place of immeasurable spiritual power, the location of an estimated 200,000 burials over 25 centuries. Indeed, it was largely thanks to the importance attributed by the empire to the Kong Lin that Qufu was spared ruthless modernization. When, in 1904, the 76th Yancheng duke, a direct descendant of Confucius, learned that a railway was to enter the city, he protested to the emperor that its tracks would interfere with the sacred and benevolent energies flowing around the Kong Lin. "The sage's very pulse," he protested, might well be stopped. Accordingly, the line was rerouted.

The Kong Lin today exists as a kind of visual netherworld, a stone forest within the arboreal one. Rising from thickets and dense brush are countless stelae and monumental statues of rams, horses, lions, and massive figures in the garb of imperial mandarins, peering eerily with sightless stone eyes. The weight of the silent, gathered generations is overwhelming, like a tidal force of time itself. You can wander all day among the tombs and never come to the end.

Here lies the 66th Yancheng duke, here the 58th, the 55th, on and on. This one was an official in Nanjing, his stela proclaims; that one a scholar in Beijing; a third, a minister of the military, "who said whatever he thought frankly and directly, even to his highest superiors." In contrast to the imperial pomp that characterizes so many of his descendants' graves, the sage's own tomb is a mound of earth inside a simple brick wall, unadorned except for a stela that states: "Perfect Sage, the Accumulator of Philosophy." It is a fitting memorial for a simple man, splendid in its understatement.

Care to journey along an ancient route to the town of Qufu, home and burial place of the great sage?

CONFUCIUS WAS POOR. His descendants were not. The Kong mansion is not a single building but a 460-plus-room complex of gardens, pavilions and courtyards. At one time, it housed some 500 family servants, including imperial appointees whose sole job was to see that Kong family dinners were properly garnished with bean sprouts.

TODAY, the mansion is a museum open to the public (admission: ¥10 or $1.20). There, in room after room, visitors can admire the opulence enjoyed by generations of Kongs, who slept in canopied rosewood beds, carved with dragons and phoenixes, and ate their meals from plates of the rarest porcelain and jade. Here they also amassed countless treasures—intricate cloisonné ornamental trees, ivory screens, scroll paintings and exquisite calligraphy—and here those artifacts remain miraculously preserved. Just west of the residence, on some 50 acres, is the magnificent Temple of Confucius (admission: ¥12 or $1.40). In a secluded courtyard east of the central sanctum, a small house of antique design marks the site of the sage's cottage.

An easy 40-minute walk north (taxis and horse carts can be hired) leads to Confucius' tomb (admission: ¥6 or .75 cents).

NO RAILWAY STATION or airport serves the city. From Beijing or Shanghai, however, air passage can be booked to the city of Jinan, 65 miles to the north. There, taxis make the two-hour drive to Qufu. Trains serve the town of Yanzhou, which is 30 minutes away by bus. Each year some 100,000 tourists descend on Qufu for the 15-day celebration of the International Confucian Festival (September 26 to October 10). Plan your trip according to your tolerance of crowds. But no matter when you go, first hunt down a copy of the now-out-of-print *House of Confucius* (1984). Written by Kong Demao, sister of the last Yancheng duke, the book chronicles the ordeals the family faced in the early 20th century during the waning years of its grandeur.

Fergus M. Bordewich is the author of Cathay: A Journey in Search of Old China *(1991). His most recent book is a memoir,* My Mother's Ghost. *Photographer Jeffrey Aaronson, based in Aspen, Colorado, has traveled extensively throughout China.*

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President Reagan (in 1985) seemed to enjoy pardoning Wilfred.

President Johnson (in 1967) talked turkey in the White House's Fish Room.

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Amy Hest's *The Friday Nights of Nana*, illustrated by Claire A. Nivola, celebrates the traditions of Shabbat.

Dogs just want to have fun in Stephen Huneck's *Sally Goes to the Mountains*.

Lenore Look evokes memories of her own childhood in *Henry's First-Moon Birthday*, illustrated by Yumi Heo.

Hannah's Bookmobile Christmas, by Sally Derby, illustrated by Gabi Swiatkowska, transports readers into back roads America.

Smithsonian Magazine's Notable Books for Children, 2001

BY KATHLEEN BURKE

FOR A DECADE NOW, HERE AT SMITHSONIAN, WE'VE surveyed the year in children's titles. That annual excursion has allowed us to range across the realms of nonfiction and fiction, discovering new voices and appraising the most recent offerings from masters at the top of their form. In addition, we've made the acquaintance of many a lost treasure, books rescued from oblivion by the discerning publishers who reissue them.

Last summer's movie blockbuster *Shrek* was based (and we use the term advisedly) on *New Yorker* cartoonist-turned-children's book author and illustrator William Steig's curmudgeonly and slovenly green monster. The movie will, it is hoped, introduce Steig's urbane and uproarious picture books to a new generation of young readers, whose reading lives would be much diminished by the absence of his Doctor De Soto, brainy rodent and world-class dentist; Farmer Palmer, whose wild wagon ride offers the last word in comic misadventure, or any

of the characters inhabiting some 30 titles in all.

As it happens, the prolific Steig has also illustrated a new title this year, A *Gift from Zeus*, published by HarperCollins and written by his wife, Jeanne. Her pixilated rendition of the life and times of the Greek pantheon, coupled with her husband's puckish watercolor-and-line drawings, is a collaboration ordained on Olympus. As a practitioner of light verse, Jeanne Steig knows few equals. Witness a snippet from her cataloging of the various misfortunes unleashed once Pandora opens the dreaded box: "Carbuncles, Quagmires, and Jiggery-Pokery, / Colic, Depravity, Lummoxes, Louts, / Barbed Wire, Insomnia, Practical Jokery, / Treachery, Lechery, Deluge, and Droughts."

Whichever of the duo is cooking up the text, a penchant for larkishly elevated diction is a hallmark of any Steig production; the lexicographical horizons of all concerned, children or the grown-ups who read to them, are likely to be expanded, and effortlessly at that. (A directive dispensed by De Soto, mouse dentist, comes to mind: "The secret formula must first permeate the dentine.") William Steig's explanation for this phenomenon is straightforward. "Kids," he has averred, "like those words."

Finally, for readers approaching our roundup of titles for the school-age set—including picture books and biographies, novels and memoirs, poetry anthologies and more—one caveat: the age categories below are necessarily arbitrary; consult the temperament and predilections of the individual child.

HOW TO ORDER

The titles that follow are available in the Museum Shop at the Smithsonian's Arts & Industries Building, or can be ordered by calling (202) 357-1368, from 10 A.M. to 5 P.M., seven days a week.

The holidays draw close. Here in Tain, we are labouring day and night to supply Glenmorangie to gift-givers the world over.

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Jeanne and William Steig's *A Gift from Zeus* recasts classical mythology.

FOR THE YOUNGEST READERS [AGES 1-6]

Sally Goes to the Mountains written and illustrated by Stephen Huneck (Abrams, $17.95) Sticks to fetch, skunks to steer clear of. When an indefatigable black Lab heads for the hills, a tail-thumping good romp is sure to follow. Irresistible for dog lovers young and old.

Henry's First-Moon Birthday by Lenore Look, illustrated by Yumi Heo (Simon & Schuster, $16) The author drew on memories of her own Chinese-American childhood—dyeing eggs a lucky red; preparing pig's feet and ginger soup—to create a winsome rendition of the traditional celebration held in observance of a newborn's one-month anniversary.

Circus Girl written and illustrated by Tomek Bogacki (Farrar Straus Giroux, $17) Evoking the vanished world of the Eastern European village where he grew up, the author conjures up the magical aura of life under the big top and the power of a kind gesture long remembered.

First Number Book (Kingfisher, $12.95) An inviting introduction to math concepts—counting and measuring, sequence and shapes—features drawings bold with primary colors.

"Let's Get a Pup!" Said Kate written and illustrated by Bob Graham (Candlewick, $14.99) Beware what you wish for: an excursion to the animal shelter could result in the acquisition of not one, but two, faithful pooches, as a young canine fancier discovers. Every child deserves an armful of Graham's entrancing titles, each of them largehearted and genuinely droll.

Some From the Moon; Some from the Sun: Poems and Songs for Everyone selected and illustrated by Margot Zemach (Farrar, Straus and Giroux, $17) Pairing traditional verse and antic watercolors, the Caldecott medalist completed, shortly before her death, a compendium certain to become a staple of the nursery bookshelf.

The Snail House by Allan Ahlberg, illustrated by Gillian Tyler (Candlewick, $13.99) As dusk gathers in their garden, three siblings who "all of a sudden got so very small" step across the threshold of a shell and set up housekeeping in that cozy redoubt. Ahlberg's cunning fantasy will stand up to many a reading.

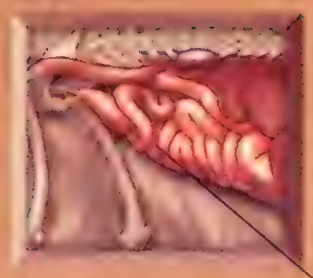
A Gift from the Sea by Kate Banks, illustrated by Georg Hallensleben (Farrar Straus Giroux, $16) Pocketed by a child at the shore, a weathered stone becomes the catalyst for a dreamy rumination on the geological forces that have, over the eons, shaped our earth.

Flora's Blanket written and illustrated by Debi Gliori (Scholastic, $15.95) The classic dilemma: no blankie, no sleepie. Naturally, the entire family lurches off on an exhaustive, exhausting search. Gliori, whose titles are grounded in her affectionate take on domestic chaos, has produced that rarest and most welcome of commodities: a perfect bedtime book.

Knitted by Grandma written and illustrated by Ruth Hearson (Penguin Putnam, $12.99) Nonstop needle clacking yields leg warmers for llamas and earmuffs for elephants, in a distinctive lift-the-flap book revealing surprises on every page.

Winter Day Play: Activities, Crafts, and Games for Indoors and Out by Nancy F. Castaldo (Chicago Review Press, $13.95) Trekking into the woods

What an adorable bundle of vital organs that needs to be nourished one cell at a time.



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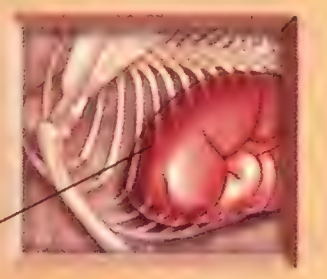

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at night, in hopes of glimpsing an owl; stirring home-made hot chocolate: these activities, not merely diversions for the preschool crowd, make for the stuff of childhood memories.

The Class Artist written and illustrated by G. Brian Karas (HarperCollins, $15.95) When he is felled by a debilitating case of painter's block, young Fred, kindergartner and Picasso wanna-be, masterminds a breakthrough. Karas recalls his own early years before the easel in this jaunty salute to the creative process.

When the Moon is Full: A Lunar Year by Penny Pollock, illustrated by Mary Azarian (Little, Brown, $15.95) Snow falling, sap rising, corn growing tall, all the months waxing and waning in the shadow of the lunar cycle, conveyed in lyrical verse, and dramatic woodcuts from the Caldecott-winning artist.

The Story Tree: Tales to Read Aloud retold by Hugh Lupton, illustrated by Sophie Fatus (Barefoot Books, $18.99) Favorites from many cultures, recast with precision and finesse, constitute an outstanding anthology.

Irving and Muktuk: Two Bad Bears by Daniel Pinkwater, illustrated by Jill Pinkwater (Houghton Mifflin, $15) In the frozen north, a couple of malingering polar bears, "no better than they should be," are bent on fleecing the good citizens of a town called Yellowtooth. This latest wacky offering from the Pinkwaters will keep kids, and their parents, in stitches.

The ever-changing seasons of the year unfold in *When the Moon is Full.*

Clarence and the Great Surprise written and illustrated by Jean Ekman Adams (Rising Moon, $15.95) A mythical corner of the Southwestern desert, where wild horses sing "Home on the Range," is also a place where friendship flourishes and unexpected revelations hover over the horizon.

Fast Food! Gulp! Gulp! written and illustrated by Bernard Waber (Houghton Mifflin, $16) From the creator of the beloved *Lyle the Crocodile* series, an homage to kid-friendly fare, hot dogs to hash browns, dished up by a supremely speedy short-order cook. It's all one big happy nosh, until someone poses the question: What's the rush?

Quilt Alphabet by Lesa Cline-Ransome, illustrated by James E. Ransome (Holiday House, $17.95) Apples and owls, pumpkins and scarecrows: each image from a rural landscape, depicted as a vivid patchwork square, invests this abecedarium with the warmth and whimsy of folk art.

Carlo Likes Reading written and illustrated by Jessica Spanyol (Candlewick, $14.99) From the breakfast table to the market, a spunky giraffe, hungry for the nourishment of words, rattles off the names of everything he spies. Spanyol's paintings, spiked with labels for scores of everyday objects, add up to an ingenious invitation to the printed page.

Have You Ever Done That? by Julie Larios, illustrated by Anne Hunter (Front Street, $15.95) Sleeping under the stars, nursing a fledgling crow to health—small, momentous childhood adventures, enumerated in poetic text and tender watercolors.

The Master Swordsman & The Magic Doorway: Two Legends from

Ancient China retold and illustrated by Alice Provensen (Simon & Schuster, $16.95) From a preeminent artist-author, tales of obstacles overcome by practitioners of two very different arts: an aspiring warrior and a painter of murals. (Additionally, two of the most engaging picture books ever, created in the 1980s by Provensen, in collaboration with her late husband, Martin, have been reissued. *A Year at Maple Hill Farm* and *Our Animal Friends at Maple Hill Farm*, companion volumes depicting life in "a house that needs painting, at the end of a road full of holes," are once again available from Simon & Schuster, $6.99 and $7.99, respectively.)

FOR MIDDLE READERS
[AGES 6-10]

Rocks in His Head by Carol Otis Hurst, illustrated by James Stevenson (HarperCollins, $15.95) Although the hardships of the Depression forced the author's father to forgo a college education, he never relinquished a passion for geology. Eventually, that spirit of inquiry allowed him to make his way in the world, a story chronicled in this paean to finding a future against the odds.

A Gift from Zeus by Jeanne Steig, illustrated by William Steig (HarperCollins, $17.95) Mirthful mythology, 16 sagas of gods and men in all, retold by one comic genius and illustrated by another.

Journey into the Rainforest by Tim Knight, photographs by Juan Pablo Moreiras and Tim Knight (Oxford University Press, $18.95) Moths the size of dinner plates, pit vipers, and trees five stories high, the wonders of the world's imperiled equatorial wilder-

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ness, documented in dazzling images.

Is My Friend at Home? Pueblo Fireside Tales, retold by John Bierhorst, illustrated by Wendy Watson (Farrar Straus Giroux, $16) In the distinguished folklorist's re-creation of a story cycle recited before the hearth in Hopi country, Bee wins a pair of wings, Moose learns to tread softly and Coyote finds, forevermore, his ears forlornly lopped.

One Day at Wood Green Animal Shelter written and illustrated by Patricia Casey (Candlewick, $16.99) In the midst of a city lies a sanctuary for creatures great and small—a pigeon with a broken leg, an abandoned hedgehog baby, a stray cat—all of them cared for by a cadre of dedicated volunteers. The author spent weeks recording the day-to-day drama in order to create her heartening portrait.

The Journey by Sarah Stewart, illustrated by David Small (Farrar Straus Giroux, $16) The quiet charm of this tale, told from the vantage point of an Amish girl who leaves her farmstead behind for a one-week sojourn in Chicago, resides in the joy that comes of testing one's wings.

The Beastly Arms by Patrick Jennings (Scholastic, $16.95) Nine-year-old Nickel, avid photographer and friend to animals, happens upon a strange Manhattan apartment building where rents hover at ludicrously low levels. He convinces his mother to move in, and the mystery deepens, in this meditation on the power of friendship and tribute to every child who marches to a different drummer.

The Lamp, the Ice and the Boat Called Fish by Jacqueline Briggs Martin, illustrated by Beth Krommes (Houghton Mifflin, $15) In the autumn of 1913, members of the Canadian Arctic Expedition found their exploration vessel icebound. The courageous scientists owed their survival to the skill and intelligence of the Iñupiaq family who accompanied them. This true account is a riveting testament to en-

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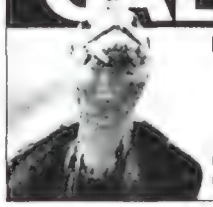

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Is My Friend at Home? draws on a series of trickster tales from the Hopi tradition.

durance in the face of seemingly insuperable adversity.

Everything on a Waffle by Polly Horvath (Farrar Straus Giroux, $16) At the Girl in the Red Swing restaurant, you can get anything you want—as long as it's served on a waffle. Eleven-year-old Primrose Squarp, an orphan a little down on her luck, shows up there regularly for tea but never sympathy. In Primrose, fans of Pippi Longstocking will find a worthy successor to that legendary and endearing child eccentric.

Kitchen Science and ***Backyard Science*** by Chris Maynard (DK, $12.95 each) Food chemistry, elementary spectography, ornithology for beginners, and more, encapsulated in scores of entertaining experiments, based on readily available household ingredients, tools and supplies.

Missing from Haymarket Square by Harriette Gillem Robinet (Atheneum, $16) Against a backdrop of the struggle for better conditions in Chicago's factories and slaughterhouses, a 12-year-old girl searches for her father, a union organizer who has disappeared. Robinet's eloquent historical novel memorializes the laborers who devoted their lives to the cause of social justice.

Traveling Man written and illustrated by James Rumford (Houghton Mifflin, $16) In 1325, an Islamic adventurer, Ibn Battuta, set out from Morocco for Mecca and the world beyond. Rumford's recounting of this epic three-decade odyssey illuminates a little-known chapter in history.

Fannie in the Kitchen by Deborah Hopkinson, illustrated by Nancy Carpenter (Simon & Schuster, $16) For the young chefs on your list, a perky picture biography of the culinary perfectionist who invented the modern recipe and produced a classic text on American cookery.

A Dragon in the Sky by Laurence Pringle, illustrated by Bob Marstall (Scholastic, $18.95) Tracing the migration of one green darner dragonfly, from wetlands in upstate New York hundreds of miles to a pond in Florida, Pringle has succeeded in creating an absorbing work of natural history.

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The Lamp, the Ice and the Boat Called Fish evokes an Arctic expedition in 1913.

by Sally Derby, illustrated by Gabi Swiatkowska (Henry Holt, $16.95) Transcending the genre of the holiday title, the author orchestrates a magical foray into back roads America, where the sound of sleigh bells is replaced by the swish of windshield wipers on a trusty traveling library.

A Castle on Viola Street written and illustrated by DyAnne DiSalvo (HarperCollins, $15.95) Dreaming of moving from their cramped apartment, a family pitches in to help their neighbors rehab abandoned houses on an inner-city block. In DiSalvo's spirited nod to community activists everywhere, they're hammering and drywalling their way to a better future.

Sailing Home, told by Gloria Rand, illustrated by Ted Rand (North-South, $15.95) Adroitly adapting a 19th-century journal of life at sea, the Rands recount the globe-trotting childhood of four siblings who sailed with their father, the captain of a cargo-carrying clipper ship, in the late 1800s. With all the crew as friends, and a menagerie of pets for company, the "never once homesick" youngsters braved the main.

The Friday Nights of Nana by Amy Hest, illustrated by Claire A. Nivola (Candlewick, $15.99) In the preparations for Shabbat, polishing candle-

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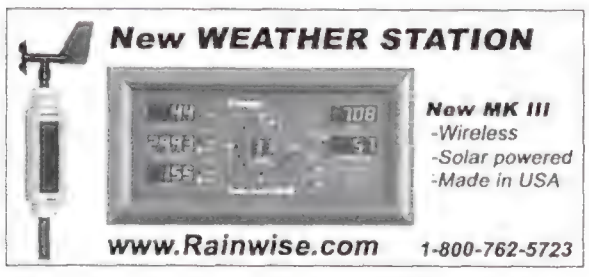

sticks and braiding dough for challah, a grandmother and her granddaughter find that tradition and familial affection are forever entwined.

Mr. Lincoln's Way written and illustrated by Patricia Polacco (Penguin Putnam, $16.99) Would that all elementary school principals were as hip and compassionate as the title character, who devises unorthodox methods for reaching a playground bully headed for serious trouble. A new title from Polacco is cause for celebration.

Stopping to Home by Lea Wait (Simon & Schuster, $16) Set in a Maine seaport village in 1806, Wait's splendid first novel charts the fate of an 11-year-old girl and her younger brother, sent into service in the household of a lonely widow. Anticipating harshness, the children find tolerance and generosity, in a touching story that also serves as a window on everyday life in early 19th-century New England.

The Gawgon and The Boy by Lloyd Alexander (Dutton, $17.99) When fifth-grader David's tough-minded aunt Annie is brought in as his tutor, he thinks he's a goner. That's when the adventure commences, in a rambunctious romp from the master of fantasy.

The Secret School by Avi (Harcourt, $16) In 1925, when a Colorado mountain settlement's one-room school closes, eighth-grader Ida decides to take on the role of schoolmarm. Along the way, she forges a future for the children of her isolated valley.

Hidden Under the Sea: The World Beneath the Waves written and illustrated by Peter Kent (Dutton, $17.99) Coral reefs and shipwrecks, giant squid and submarines, legend and lore, detailed in intricate drawings.

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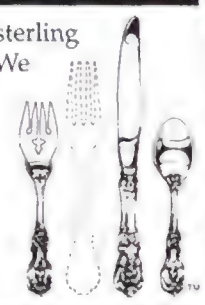

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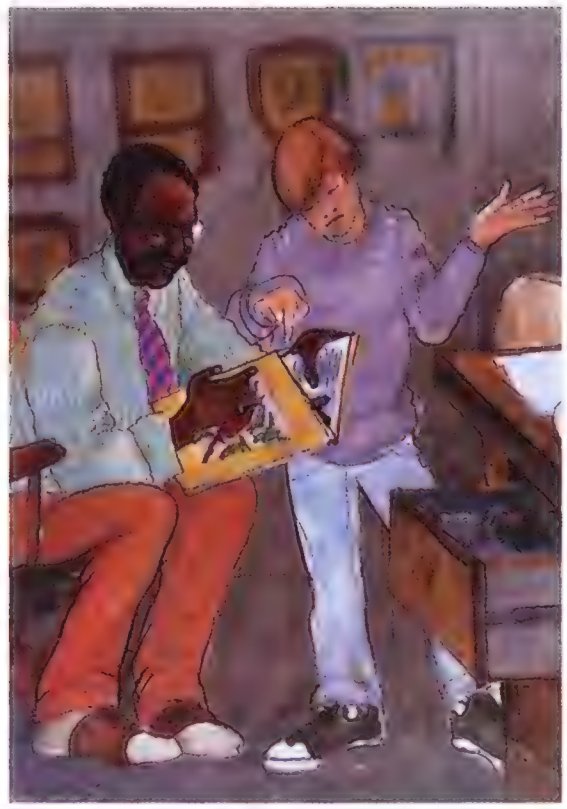

A troubled child finds a compassionate mentor in the touching *Mr. Lincoln's Way.*

sufficient accolades upon this first novel by the distinguished poet and picture-book author. Against the violence shadowing everyday life in a Los Angeles neighborhood, Johnston juxtaposes another reality—of close-knit families and loyal friends; a cat rescued from a tree; a retired Lakers legend who shows up at an inner-city gymnasium to coach basketball.

Q is for Quark: A Science Alphabet Book by David M. Schwartz, illustrated by Kim Doner (Tricycle, $15.95) Wearing his erudition lightly, Schwartz has fashioned a disarmingly accessible guide to cutting-edge research on topics from atoms to REM sleep (the *z z z . . .* entry). Not just for kids—if you've ever wondered exactly how the double helix got its DNA, this sophisticated, entertaining primer will elucidate all.

Troy: A Novel by Adèle Geras (Harcourt, $17) As the gods ordain the fates of men, the siege of the city on the hill enters its tenth year. Weary of bloodshed, the handmaidens of Troy bind up their wounded warriors. Geras' riff on Homer's epic, narrated from the point of view of the women who wait behind the walls, brilliantly re-creates the fortunes of war.

Bad Boy: A Memoir by Walter Dean Myers (HarperCollins, $15.95)

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"Harlem," writes the author, "will always live with me." Growing up in the vibrant neighborhood's streets in the 1940s and '50s, Myers, who would emerge as one of his generation's foremost writers for young people, found books to be his refuge. As he attempted to navigate the shoals of adolescence, he also struggled to come to terms with the dangerous realities of race in America, nearly squandering his gifts along the way. (Contains mature material.)

The Science of Life: Projects and Principles for Beginning Biologists by Frank G. Bottone, Jr. (Chicago Review Press, $14.95) At once a lively introduction to the scientific method and a survey of hands-on experiments, this outstanding overview touches on important concepts in botany, bacteriology, molecular biology, mycology, microbiology and more.

Girlhearts by Norma Fox Mazer (HarperCollins, $15.95) In the aftermath of her mother's sudden death, 13-year-old Sarabeth Silver finds herself orphaned and dependent on the kindness of friends. She will redefine herself and her notion of family in a novel that probes, without a trace of mawkishness, the contours of grief.

Planet Zoo: One Hundred Animals We Can't Afford to Lose by Simon Barnes, illustrated by Alan Marks (Trafalgar Square, $29.95) From Argentina's pink-fairy armadillos to Zaire's white rhinos, endangered creatures the world over are poised on the brink of extinction. In addition to introducing scores of unfamiliar animals, the author explains conservation and captive-breeding initiatives and outlines the steps kids can take to support these measures.

Raven of the Waves by Michael Cadnum (Scholastic, $17.95) As Viking depredations on medieval England commenced, terror haunted the coastal settlements. Interweaving the destinies of two central characters—a young Norse warrior and a boy taken captive by the plunderers—Cadnum

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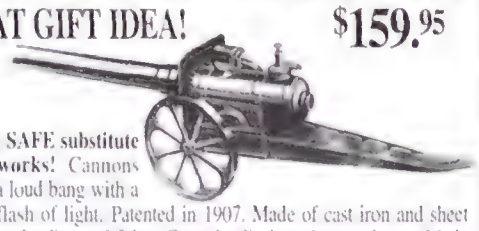

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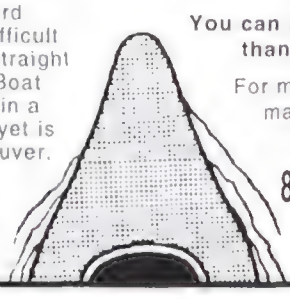

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Benno's Bear by N. F. Zucker (Dutton, $16.99) In the marketplace of a central European city in the 1800s, a young pickpocket lives by his wits, using his beloved trained bear as his "lookaway" to distract unwary passers-by. In an extraordinary debut, the novelist limns the connection between a child and a wild creature, a bond that will free them both.

Breaking Through by Francisco Jimenez (Houghton Mifflin, $15) In this sequel to his autobiographical novel, *The Circuit*, Jimenez chronicles his family's fierce determination to overcome the crushing poverty they face as field laborers in California's Central Valley during the 1950s and early '60s. His page-turning narrative, devoid of sentimentality or rancor, is a substantial contribution to the literature of the memoir.

Just Ask Iris by Lucy Frank (Atheneum, $17) A classic adolescent girl's dilemma catapults the heroine into the lives of her fellow apartment-building dwellers. This tribute to good-hearted New Yorkers becomes

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especially poignant in the aftermath of September 11.

The Chimpanzees I Love: Saving Their World and Ours by Jane Goodall (Scholastic, $17.95) "Ever since I was ten years old," Goodall muses, "I had dreamed of living with animals in Africa." In describing her groundbreaking studies of chimps in the wild and her ongoing efforts to campaign for habitat conservation, the renowned primatologist calls on young people to join in her commitment to activism.

The Circus in the Woods by Bill Littlefield (Houghton Mifflin, $15) Outside a cluster of Vermont lakeside cottages, where a family vacations each year, the forest beckons. As she begins to leave her childhood behind, venturesome Molly discovers an elusive band of ballerinas, lion tamers and fortune-tellers deep within its depths. Littlefield's perfect-pitch coming-of-age novel delineates the mysterious terrain of adolescence with uncommon perception.

Hidden Worlds: Looking Through a Scientist's Microscope by Stephen Kramer, photographs by Dennis Kunkel (Houghton Mifflin, $16) As a microscopist, Kunkel has examined and photographed objects most of us have never stopped to think about: a mosquito's foot, a grain of sugar. His work allows everyone to perceive the invisible splendors that surround us.

Fair Weather by Richard Peck (Penguin Putnam, $16.99) The Newbery-winning novelist carries the Becketts, small-town born and bred, from downstate Illinois to that big-city extravaganza, the Chicago World's Fair of 1893. Melding historical figures, including Buffalo Bill and Lillian Russell, and an unforgettable fictional family, Peck's comic tour de force deftly skewers small-mindedness in any form.

Popular Science: Science Year by Year—Discoveries and Inventions from the Last Century That Shape Our Lives (Scholastic, $19.95) Review-

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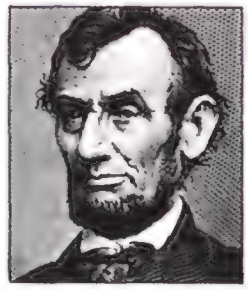

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ing achievements in more than 25 disciplines, archaeology and astronomy to oceanography, physics and zoology—this intriguing omnibus emphasizes the dramatic breakthroughs that define the era we inhabit.

We Need to Go to School: Voices of the Rugmark Children, compiled by Tanya Roberts-Davies (Douglas & McIntyre, $15.95) In 1999, the author, then a 16-year-old high school student, traveled from Canada to Nepal. For six weeks, she lived at a refuge, funded by the Rugmark Foundation, for youngsters who had been forced to work in that country's carpet-weaving factories. Transcribing their accounts, she produced a remarkable piece of reportage, documenting the reality of exploitation and the resilience of children who envision, for the first time, a future.

A Hole in the World by Sid Hite (Scholastic, $16.95) When an overprivileged 15-year-old deceives his parents, he is, as punishment, dispatched to spend the summer as a farmhand at a relative's isolated spread in the Blue Ridge Mountains. Little does the boy realize this banishment will send him in pursuit of happiness. Hite transmogrifies the shopworn kid-redeemed formula into a masterpiece, poignant, comic and wise.

SMITHSONIAN Senior Editor Kathleen Burke is a member of the young people's fiction panel for the Los Angeles Times Book Awards and reviews for kidsbestbooks.com, coming online soon.

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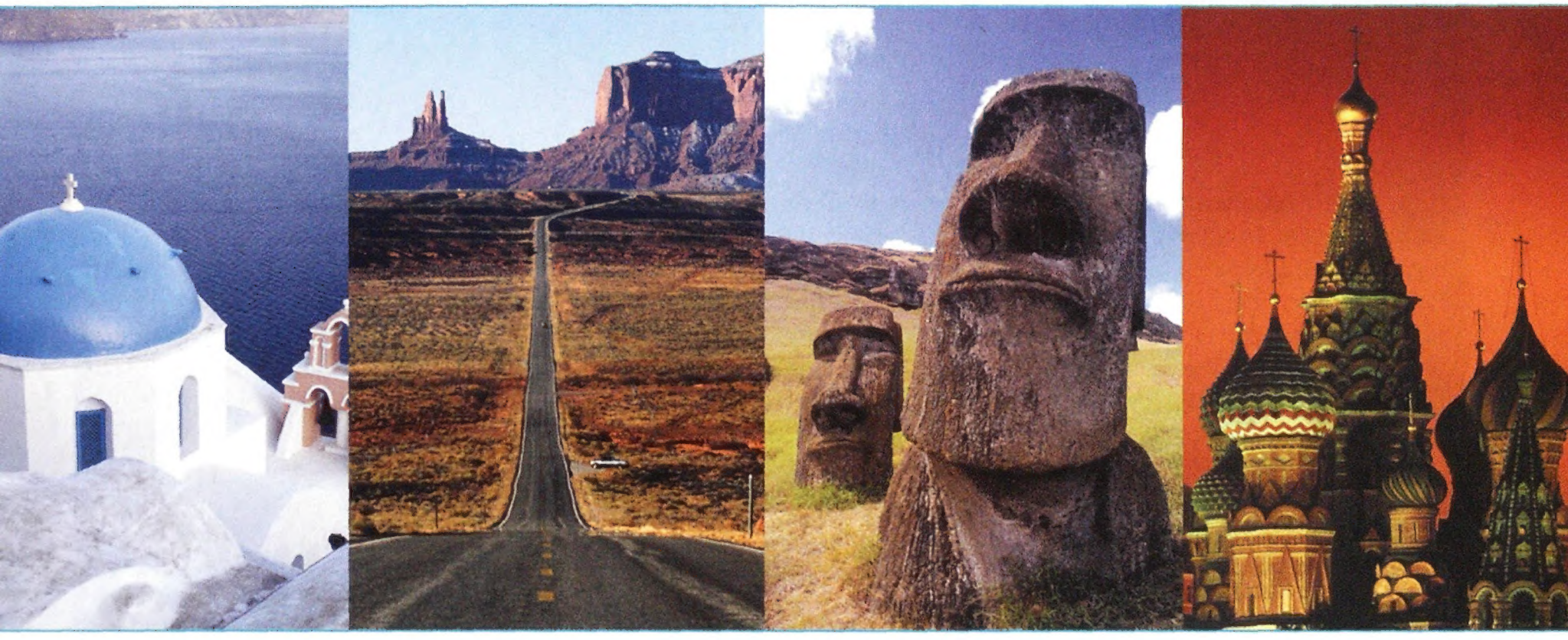

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THE LAST PAGE

Aftershocks

BY SAMUEL G. FREEDMAN

ATOP A TABLE BESIDE THE FRONT DOOR OF MY FAMILY'S apartment in Upper Manhattan there sits an ornate tray containing spare house keys, two shoehorns, a stray Pokémon card and a roll of Kodak Gold 200 film. We finished shooting the 24 exposures several weeks ago, my wife and I, and yet we cannot bring ourselves to take the film a few blocks away for developing. We know what those pictures will show.

It was the evening of Labor Day, the advent of a new school year, and we took our two children for a summer's-end treat, a sunset cruise around Manhattan. The kids were being kids that night, bumping into passengers. My wife stilled them for a portrait, their giddy forms over-arched by the twin towers of the World Trade Center, windows aglow from base to summit.

Knowing what became of them, we cannot bear to see that photograph, the proof of what was. Or perhaps we clutch that little cylinder of film as a talisman of innocence. Either way, even weeks after the horror, we shudder still with the aftershocks. They murder our sleep and infest our days.

By the standards of our beloved, beleaguered city, we count ourselves impossibly fortunate. We live far uptown, seven miles north of ground zero. We have children ages 9 and 7 to attend to and amuse, distracting ourselves, too, in the rhythms of homework and bedtime stories.

More in the wake of the catastrophe than on the day of it, however, we feel the presence of the dead. Not long after the attack, we first began to notice flyers placed by friends and relatives of the missing. On a bus shelter, on a phone booth, on a streetlamp's column: Casey Cho, "has tattoo of dragon down middle of back"; Patrick Murphy, holding aloft a child, probably his daughter, in a matching sundress and bonnet; "Attention *Can You Find my Mommy * Colby age 9."

By the time the survivors made it all the way to Morningside Heights to post their signs, they surely knew no passerby was going to have a clue; no, the clues had been smashed, vaporized, ripped asunder. What they wanted, I came to realize, was to say simply that here had been a life.

In happier times, ours is a raucous, rude, cacophonous city, a pastiche of cursing and kvetching and laughing too loud. Now, when we take in a street fair, when we run in the park, the sound is of strained politeness, of waiting to be seated at a funeral.

We compare notes with other parents. One has a daughter who dreamed of jumping from the "thirty-three thousandth floor." Another climbed into her daughter's bunk bed at 4:30 in the morning to try to quell the demons. "I'm right with you," she told her quaking child. To which the girl responded, "But you can't come inside my head."

There are appeals for us to heal, to recover, to go on with our lives. We cannot heal until we mourn. We cannot mourn until we bury. We cannot bury until we find the fallen, and many of them, thousands perhaps, will never be found, and so the wound in our collective soul will remain forever unbound.

The other morning I spotted a memorial along Riverside Drive. In all my years as a New Yorker, I had never noticed until this day that the monument there paid tribute to firefighters who died in the line of duty. The 1912 inscription pronounced them "Soldiers in a War That Never Ends." Along the pediment, my comrades-in-grief had left dolls of Bert and Ernie from "Sesame Street" and a hardcover copy of *The Little Engine That Could*. There was a sculpture of a clenched fist and a set of lyrics for "America the Beautiful." Mostly, though, there were candles—Yahrzeit candles, votive candles, candles of the Virgen de Guadalupe, offering solace, and of the archangel Michael, sword held high. Someone wise had thought to leave a box of matches, should any of the flames expire.

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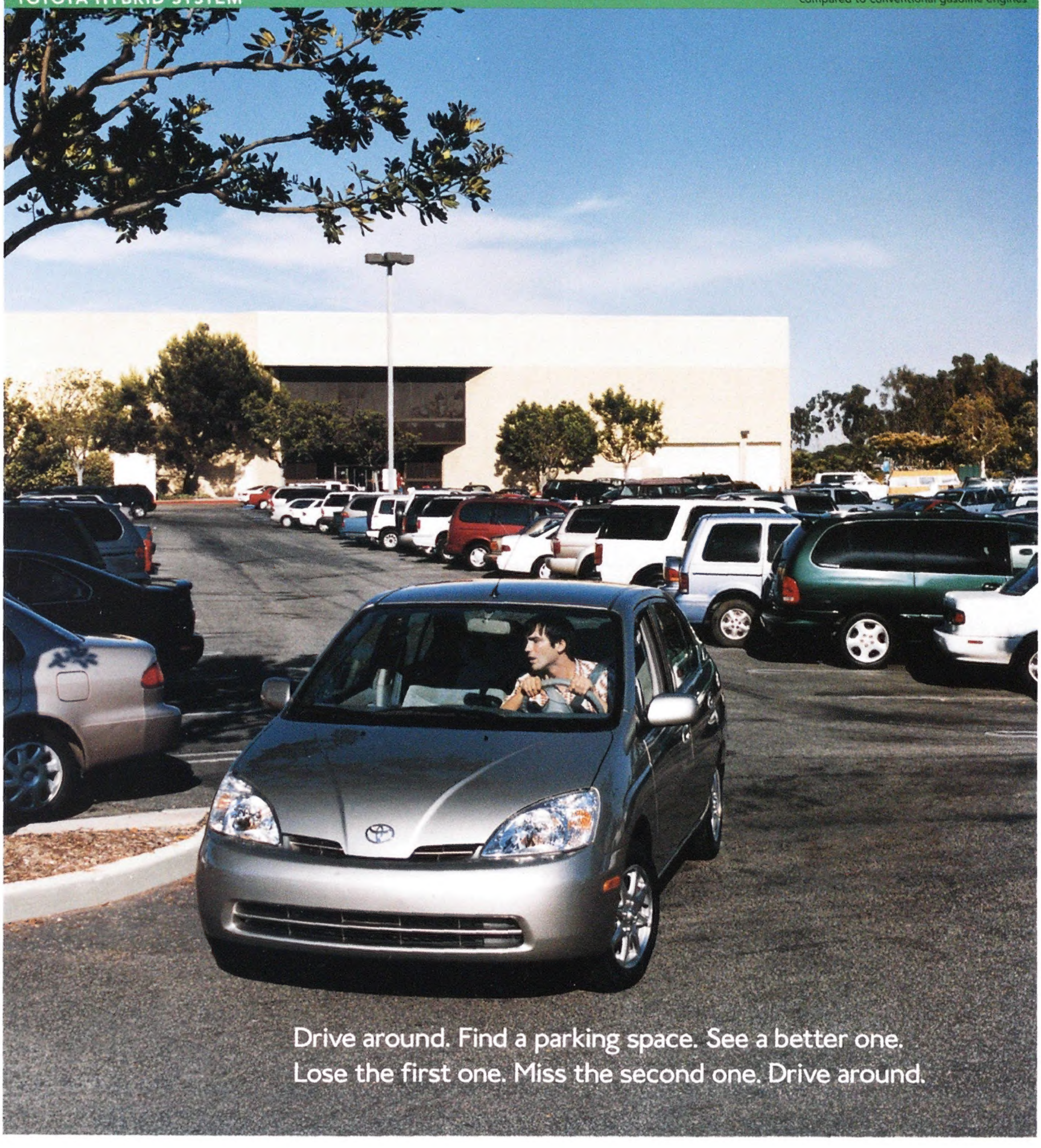

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